

CITIZENS' ENVIRONMENTAL SAMPLING COMMITTEE

The following hearing was taken at the  
Arvada City Hall, 8101 Ralston Road, Arvada, Colorado 80002,  
on September 1, 1993, at 8:45 a.m., before Suzanne M. Baird,  
Registered Professional Reporter and Notary Public within  
Colorado.

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## 1 APPEARANCES:

2 Jim LaVelle  
LeRoy Moore  
3 Marilyn Case  
Terrol Winsor  
4 Bini Abbott  
Greg Marsh  
5 Tony Harrison  
Jim Stone  
6 Neils Schonbeck  
Ken Korkia  
7 Bob Brockmann  
Todd Margulies  
8 Paula Elofson-Gardine  
Ann J. Lockhart  
9 Normie Morin

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1 WHEREUPON, the following proceedings were had:

2 MR. LAVELLE: I kind of thought 8:30 would be a  
3 little early, but we will have a cozy hearing today. I will  
4 start out by apologizing for missing meetings and such. It  
5 sort of came down to do I want to keep my job or keep coming  
6 to these meetings, and you got second priority. Hopefully  
7 those won't arise with such frenzy in the future here.

8 I thought we would again introduce ourselves to  
9 make sure our reporter has all our names straight and can  
10 get the record down. I'm Jim LaVelle, member of the  
11 advisory panel.

12 And should we go this way?

13 MS. CASE: Marilyn Case.

14 MR. WINSOR: Terrol Winsor, Radiologic  
15 Assessment.

16 MS. ABBOTT: Bini Abbott, Health Advisory Panel.

17 MR. MARSH: Greg Marsh.

18 MR. HARRISON: Colorado Department of Health.

19 MR. STONE: Jim Stone, Colorado State  
20 University.

21 MR. SCHONBECK: Neils Schonbeck, member of the  
22 Health Advisory Panel.

23 MR. KORKIA: Ken Korkia, Rocky Flats Cleanup  
24 Commission.

25 MR. BROCKMANN: Bob Brockmann.

1 MR. MARGULIES: Todd Margulies.

2 MS. ELOFSON-GARDINE: Paula Elofson-Gardine.

3 MS. LOCKHART: Ann Lockhart, Colorado Department  
4 of Health.

5 MS. MORIN: Normie Morin, Colorado Department of  
6 Health.

7 MR. MOORE: LeRoy Moore, Rocky Mountain Peace  
8 Center.

9 MR. LAVELLE: We do have an agenda this morning,  
10 and we'll start off with two real brief reports, and then we  
11 will get into the discussion of sampling sites and goals and  
12 such, if that's okay with everyone. We'll have Todd start  
13 off by giving a report on efforts to contact landowners for  
14 permission to sample. Todd.

15 MR. MARGULIES: Can I do it from here?

16 MR. LAVELLE: That's fine.

17 MR. MARGULIES: Jim Stone and I met last week in  
18 between his field sessions and mine. Jim has already done,  
19 through his past work, been able to identify, of the  
20 tentative sites, I would say between 10 and 15 of those  
21 sites, which makes my job a little bit easier. I'm ready to  
22 go.

23 As soon as we have, hopefully today, made  
24 decisions on a few of the remaining ambiguous sites--there's  
25 probably 20 or 25 that I'm comfortable with and ready to

1 move on to go to the county assessor's office. So basically  
2 all I need today is a definition of the confirmation of  
3 exact sampling locations, and I'm ready to go.

4 The ones that I'm most concerned with today  
5 are--and ask for is to firm up Bob's sites up in  
6 Boulder County. There was a brief discussion last meeting,  
7 and we had, I believe, five in the Walnut Creek area, and we  
8 had mentioned maybe consolidating those down to one or two.  
9 That's another area, and I think Bini probably might have or  
10 I have been told might have a pretty good handle on that  
11 particular area.

12 But, basically, as soon as we can get it on the  
13 agenda, there's a No. 40. As soon as we can decide on--get  
14 exact locations, then I'm ready to go get the maps and find  
15 out the landowners. It shouldn't take me any more than a  
16 couple days. I can't put a couple two or three days  
17 straight in on it. I would say within two days' total work  
18 I can have all the landowners identified and marked on maps  
19 and so on and so forth and be ready to send out the  
20 letters. So that's kind of where I'm at.

21 So, as long as we can get those decisions made  
22 today, then it will be a done deal.

23 MR. LAVELLE: Does anyone have any questions for  
24 Todd?

25 (No response.)

1 MR. LAVELLE: Okay. That's what I like; brief,  
2 hard-hitting reports. Okay. We also have Marilyn Case with  
3 us today, and she's going to give us a brief report on the  
4 data search by Radiological Assessment.

5 MS. CASE: I was told there would only be ten  
6 people, so I made ten copies, if you want to share.  
7 Bernie Schleien conducted this database search. He has  
8 access to HP QUEST, MEDLINE, TALKSLINE, and then an  
9 interactive program called DIALOG through which he can also  
10 access other databases.

11 The first one I handed around gives a brief  
12 description of HP QUEST and the printer on the third page  
13 accidentally put MEDLINE on there too. We didn't get any  
14 hits with MEDLINE; but with HP QUEST, we used key words of  
15 plutonium, transuranics, vegetation, plants, Russian  
16 thistle, sagebrush, trees, tree rings, and prairie, and we  
17 got, oh, about a dozen matches with that. And most of these  
18 articles are pretty familiar with anybody who's  
19 radioecology.

20 If you will notice the journals selected that  
21 these are Health Physics, Radiation Protection Management,  
22 Radiation Protection Dosimetry, Medical Physics, NCRP, and  
23 so on and so forth. So you can look through those.

24 Then the second one we looked at was ENVIROLINE.

25 MS. ELOFSON-GARDINE: Marilyn, were you the one

1 calling for key words from various people? I tried to call  
2 you, and I could not get through your line.

3 MS. CASE: My answering machine did not answer?

4 MS. ELOFSON-GARDINE: I had busy every time I  
5 called you. I didn't leave a message with Normie. Nobody  
6 ever called me back after the initial message on your  
7 machine, and I had requested that you guys provide for us a  
8 proposed listing of key words so that we could scan that,  
9 and that never happened.

10 MS. CASE: Bob did talk to--

11 MR. MARSH: Bob told me that I would be called by  
12 you, and I never had been either.

13 MS. CASE: He gave me a list of key words--

14 MR. MARSH: That list was just going around, and  
15 I was given 30 seconds to think of them and give them to  
16 him. And that's why not getting your follow-up call was  
17 somewhat disappointing, to say the least.

18 MS. CASE: We can run another one. Consider this  
19 a preliminary run.

20 But, I think, for the purpose of--for our  
21 objective of finding plutonium vegetation, we pretty much  
22 covered the list.

23 MS. ELOFSON-GARDINE: That is not--americium is a  
24 major--

25 MS. CASE: That's--

1 MS. ELOFSON-GARDINE: That doesn't cover  
2 americium necessarily because some things are very  
3 topic-specific, so that's why there is concern about these  
4 disconnections-with-communication efforts. So this is  
5 not--this is not adequate.

6 MS. CASE: Well, consider this a preliminary  
7 search, and we will do a second one.

8 MS. ABBOTT: There's no C.

9 MR. MARSH: What was C?

10 MS. ABBOTT: On your key words, you have A, B,  
11 and then go to D.

12 MS. CASE: I don't know. Oh, D was soil. I'm  
13 sorry.

14 MS. ABBOTT: What was C?

15 MS. CASE: I'm not sure. I'm not sure. We also  
16 did one on soil, and we didn't get anything related to  
17 vegetation on soil. If anybody cares to look at that one,  
18 we can look at that.

19 ENVIROLINE covers, as you can see, many  
20 environmental journals, and the types of references we found  
21 in there were very similar to those we found in HP QUEST,  
22 and I'll summarize this all at the end. Then we tapped into  
23 Energy Science and Technology, which is a DOE database, and  
24 found many of the same articles and journals that we found  
25 in the first two searches.

8



1                   Bernie also looked at a database called  
2   Environmental Bibliography. We didn't get any hits with  
3   that database search.

4                   MR. MARSH: Which one?

5                   MS. CASE: Environmental Bibliography. I can  
6   pass that around as a descriptive.

7                   MR. MARSH: Did you do that one yesterday also?

8                   MS. CASE: We didn't do any of these yesterday.

9                   MR. MARSH: 8-31-93.

10                  MS. CASE: That is the cover sheet which Bernie  
11   faxed me yesterday which describe what the databases were.  
12   He did these databases last week.

13                  MR. MARSH: Okay.

14                  MS. CASE: And then we looked at CHEMSEARCH, and  
15   we found nothing in that either.

16                  MR. MARSH: Where was this search conducted  
17   from?

18                  MS. CASE: It was conducted from Bernie Sline's  
19   office.

20                  MR. MARSH: Where is that?

21                  MS. CASE: In Maryland.

22                  MR. MARSH: So you called him with these key  
23   words, and he did the things and faxed these? Is this a fax  
24   sheet that we are looking at with the date on the top?

25                  MS. CASE: The cover sheet is--I asked him to

1 send me a description of what the databases were, so he  
2 faxed those to me yesterday, just so you had an idea of what  
3 kind of journals that they accessed, and what Bernie does,  
4 in dialog, is he calls up and gives them the key words.  
5 They would run it, and then they have to fax him the results  
6 or put them on his computer, and then he sends them to me.

7 MR. MARSH: "They" meaning?

8 MS. CASE: The company, dialog company, or the  
9 specific database.

10 MR. MARSH: Okay.

11 MS. CASE: Now, you will find in most of those  
12 articles most of the research on plutonium uptake in native  
13 vegetation has been done at the DOE labs. It has been done  
14 by folks at CSU, at Rocky Flats, by Nevada test site people,  
15 Savannah River Laboratories and, most notable, a gentleman  
16 named Ginsler. And a lot of the articles you see in there  
17 is found in here, and this is dated 1980.

18 MS. ABBOTT: What about Dr. Jock Cobb? He did  
19 all kinds of studies. He had a special spider plant.

20 MR. MARSH: Yes, he did. That was about 1980.

21 MS. ABBOTT: Maybe it was.

22 MS. CASE: I was particularly interested in woody  
23 vegetation, particularly, in looking at the plans.

24 MS. ABBOTT: But Dr. Jock Cobb was doing studies  
25 of Rocky Flats itself. And as far as I know, I know he was

10

1 using that spider plant, and he was wondering about bringing  
2 some plants out to our place, and so I think you should look  
3 into that.

4 MS. CASE: Bernie has done a separate database  
5 search on Rocky Flats. I didn't bring that with me, so that  
6 may be in there. And this is by no means inconclusive.

7 MS. ELOFSON-GARDINE: With respect to some of  
8 Carl Johnson's independent scientific studies, they may not  
9 be interested in these databases. Some of what  
10 Carl Johnson did was done under some different health  
11 organizations--county or national or international--and so  
12 those are not going to be found in DOE databases.

13 MS. CASE: That's true. These are not all DOE  
14 databases.

15 MS. ELOFSON-GARDINE: You will not find them on  
16 these.

17 MS. CASE: That's true. We were asked to do a  
18 database search. And if there are other databases that you  
19 want us to access, that's fine, but some of these research  
20 projects may not be in any database.

21 MS. ELOFSON-GARDINE: That's true. That's why  
22 you may have--

23 MS. CASE: That's why we get into personal  
24 interviews.

25 MS. ELOFSON-GARDINE: You may have to go into an

1 author search.

2 MS. CASE: Exactly. That wasn't my purpose  
3 today. I was told we were doing a database search, and I  
4 think that's what I did.

5 MR. WINSOR: Is there a request to check into  
6 Jock Cobb?

7 MS. ABBOTT: Absolutely.

8 MS. ELOFSON-GARDINE: I have his address and  
9 phone number.

10 MS. CASE: We will add him to our list of  
11 interviews.

12 MS. ABBOTT: He was up at that seminar in  
13 Boulder, the one put on, well, last spring. When was that?

14 MR. SCHONBECK: March.

15 MS. ELOFSON-GARDINE: He had done a lot of  
16 evaluation of various records of the Church lawsuit, and  
17 that's somebody you should be talking to.

18 MS. CASE: Give us a list of names of people we  
19 should be interviewing. I would appreciate that.

20 MS. ELOFSON-GARDINE: I would like to talk to you  
21 about that.

22 MS. CASE: That's fine.

23 MR. MOORE: Do you have the information on  
24 Lynn Ackland?

25 MR. WINSOR: I'm getting the spelling.

12

1 MR. MOORE: A-c-k-l-a-n-d.

2 MS. CASE: Yes. We will get together and get  
3 some additional key words with Paula and Greg and anybody  
4 else that would like to, and we will conduct interviews of  
5 anybody.

6 MS. ELOFSON-GARDINE: We did ask, when you first  
7 started this, to have a list of what key words you were  
8 starting with so we could supplement it. That would have  
9 helped in the beginning if you would have provided that to  
10 people such as Greg, Ken, myself, and some others, and then  
11 we could tell you what we see is missing. It's kind of hard  
12 for me--

13 MR. SCHONBECK: We've already been on this  
14 point. I think that Marilyn said that this was a  
15 preliminary list, that we'll add to it. Let's let it be and  
16 then provide her with the authors that we know about in the  
17 locale here. There are a number of us who have bits and  
18 pieces of that, and we can put it all together.

19 MS. CASE: Most of the materials you will see in  
20 there is pretty familiar with anybody that's been in  
21 radioecology. Generally, the conclusions you can get from  
22 the references in those documents is that plutonium uptake  
23 in vegetation is pretty limited. If you look at the  
24 concentration ratios, that is the concentration of plutonium  
25 in vegetation over the concentration in soil, and generally

1 ranges from about ten to the minus six to ten to the minus  
2 four. And sometimes, they find higher concentration ratios  
3 in areas where there are species that are very hairy, and  
4 the mechanism seems to be fully depositioned if you watch  
5 the plants and you don't see as much.

6 Now, we also looked into our own library,  
7 and Paul Voilleque was looking through the  
8 Journal of Radioactivity and found a very interesting  
9 article on plutonium in tree rings.

10 MR. WINSOR: Tree rings?

11 MR. MARSH: 1993. See, that's a new study.

12 MS. CASE: This is hot off the press. This is  
13 1993. This study was conducted in Nagasaki, Japan. They  
14 cut down some very old trees that were 78 years old, took  
15 some slices, and then took the rings and analyzed them. And  
16 what's really interesting, if you look on their page 59,  
17 which is Figure 2, and these 147 appear to be very mobile  
18 and don't give us much of a record over time, but if you  
19 look at plutonium 239 and 240, you see definite trends in  
20 there. There is a peak in the '40s and that corresponded,  
21 of course, with the atomic bomb detonation and later  
22 peaks--corresponds with the global fallout.

23 And another interesting fact is that the peaks  
24 from the atomic fallout from the bombs at Nagasaki were  
25 smaller than the globals and that was related to

1 bio-availability of plutonium. They theorize that if it was  
2 deposited on the leaves and they were smaller particles,  
3 that it would be easier to be fully absorbed--it was a lot  
4 easier.

5 Another factor there, too, it maybe a function of  
6 buildup in plutonium in soil over time, and so you get  
7 more--the baseline increases in later years.

8 But I think this is very intriguing for  
9 Rocky Flats. I had my doubts about whether we could use  
10 tree rings to look at plutonium releases over time. We  
11 couldn't get ahold of Ward Whicker. He apparently is on  
12 vacation and could not be reached, but we talked to  
13 Shawki Ibrahim--

14 MS. ELOFSON-GARDINE: Greg, we can't hear what  
15 she's saying.

16 MS. CASE: --about the possibilities of using the  
17 tracker method they are using, and he was very hopeful that  
18 that's a method that we might be able to use for such a  
19 study. He says he thinks he can get down to the atoms. So  
20 the detection limits would be low enough that we might be  
21 able to take borings of trees on the side.

22 Now, I asked Terrol, who is an old-timer out at  
23 the site, if there is any sort of woody vegetation out there  
24 that we might be able to tap into. We wouldn't want to  
25 harvest it, but probably just core it, and he came up with a

1 species list at Rocky Flats, and then there are a couple of  
2 candidates. I will let him discuss that, but we thought  
3 when we could get through EGG protocol, we would like to  
4 take a visit and physically locate where these woody  
5 specimens are.

6 MR. WINSOR: I think I have 13 copies of this  
7 one. This is a plant list of woody plants at Rocky Flats,  
8 and some of these are very uncommon out there--just a few  
9 specimens. We have to take under advisement whether all  
10 these things are available for such purposes of collecting  
11 the plants and analyzing them for plutonium. This will have  
12 to be worked out, I reckon, if we can get access to a couple  
13 of them to start searching Rocky Flats' plants.

14 Like, for example--as I said, this is merely a  
15 list of the stuff available and the coniferous trees are  
16 probably almost all to the west edge of the plant, so it is  
17 unlikely to be much of a candidate.

18 Then comes such things as longevity. A lot of  
19 these are short-lived shrubs, and if we want to pick up some  
20 from the '57 fire, we don't have much hope. This doesn't  
21 mean all hope is lost. Over to the south, south and east at  
22 least, follow the water courses like the plains cottonwoods,  
23 which is a long-winded tree which would, at least, be worth  
24 sampling perhaps for information that goes back to pre-1957  
25 and up to the present.



1           And if we are concerned that certain of these are  
2 essentially stream-side trees, there are possible candidates  
3 in Siberian elms. They are more of a dry-land tree, and  
4 that is a possibility.

5           It's conceivable that I missed a few species that  
6 might exist at Rocky Flats. This is on the property, but a  
7 good search might turn those up. Whether we wish to extend  
8 these to off site is perhaps useful to consider, but if you  
9 notice the plant material yourself, I think you can probably  
10 go through this.

11           MS. ELOFSON-GARDINE: I had a suggestion on  
12 this--this is a good list--that if we took some of the  
13 aerial surveys of the area for, you know--they've got  
14 pictures of presite selections, postsites, and I would think  
15 that if you compared those with the most current aerial  
16 overflight of the area, maybe you could find a couple trees  
17 that had been there from the beginning that you could  
18 identify for this kind of testing.

19           MR. WINSOR: That's a good idea. If not from the  
20 government, we at least have Colorado aerials for the--

21           MS. ELOFSON-GARDINE: That's where I've gotten a  
22 lot of our--

23           MR. KORKIA: Those trees are left over from the  
24 stage stops that used to go through there. That has been  
25 extended for quite sometime. It's in the southeastern

1 location.

2 MR. WINSOR: Yes. That's sufficiently ancient,  
3 and it's actually just slightly west, straight south of the  
4 midpoint plant, but it might be an interesting one to take a  
5 look at.

6 MR. LAVELLE: I'm just wondering, is there any  
7 relationship between transpiration rate and the ability to  
8 take up these sorts of things? I'm just wondering if you  
9 use cottonwoods, which pump lots and lots of water through  
10 them constantly, if that would be a better candidate than  
11 something like conifers or something else sitting in a drier  
12 location. That is not really--it's not growing as rapidly;  
13 it's not moving as much water through it.

14 MS. CASE: I think it's probably that plus the  
15 function of the moist environment there. Although plutonium  
16 is pretty invisible, they found, in moist settings, that the  
17 trees were taken up more effectively.

18 MS. ELOFSON-GARDINE: There were a couple of  
19 articles we came across, and it was in one of the radiation  
20 journals several years ago, and there were write-ups  
21 regarding the Khystum, I think, in Russia in '57, and they  
22 had found like 160 miles of forest that had been severely  
23 contaminated and that they had done some studies on which  
24 trees were more hardy than others, you know, what were the  
25 ones that survived the best.

1           And I think that they also had made a few  
2 conclusions about which ones were more susceptible to uptake  
3 than others, and I know I have that in my archives  
4 somewhere. It might have been Radiation Biology or Health  
5 Physics. It was probably Health Physics because I think I  
6 had gone through three samples of Health Physics archives to  
7 come across one of those.

8           So there are some studies, but again, key word  
9 searches aren't going to find some of these. Sometimes you  
10 have to look, in large part, how we have done our researches  
11 because we didn't want to leave stones unturned.

12           So I would suggest we go back and look at that  
13 and see which species they identified and some of these  
14 researches that had similar elevations to ours.

15           MR. LAVELLE: Well, okay, do we want to move  
16 along? It sounds good. I'm assuming that we will want to  
17 circulate the current list of key words, get suggestions,  
18 and rerun some of the searches; is that correct?

19           MS. CASE: Yes.

20           MR. LAVELLE: So, Marilyn, you can do that,  
21 circulate the key words to Paula and Greg and Ken and  
22 whoever else you think needs to see them. Anyone else on  
23 the panel want to see them?

24           MS. ELOFSON-GARDINE: Jim Stone.

25           MR. LAVELLE: Jim Stone. That would be good.

1 MS. ELOFSON-GARDINE: The professional engineer  
2 from RFP.

3 MS. CASE: What I would like to suggest is Bernie  
4 can electronically find the articles we are interested in  
5 making a bibliography, and we can get copies of all the  
6 articles, and if anyone wants a copy, they can come through  
7 us.

8 MR. LAVELLE: Does that sound reasonable? So  
9 we'll redo the searches with the key word suggestions, get a  
10 copy of all the articles that come out, and as we want them,  
11 we can look at those articles.

12 MR. SCHONBECK: Also, to add to the list of  
13 authors that we know about.

14 MR. LAVELLE: That's true. All of these can be  
15 searched on authors' names. And, of course, we will have to  
16 do searching other than just the databases. But for right  
17 now--

18 MR. MARSH: It might be better to call the  
19 authors of concern rather than trying to do a search for  
20 their name.

21 MS. CASE: I had planned on doing that.

22 MS. ELOFSON-GARDINE: A lot have privately  
23 distributed their materials, and that's how we find them.

24 MS. CASE: That was third on our list, to contact  
25 the names we see again and again.

1 MR. MARSH: And Martell.

2 MS. CASE: And Martell.

3 MS. ELOFSON-GARDINE: Carl Johnson.

4 MS. CASE: I'll let you do that.

5 MR. LAVELLE: Okay. I guess if we want to move  
6 on now, the next thing on the agenda is develop a consensus  
7 on two more proposed sampling goals which was suggested at  
8 the last meeting, and the two goals are: Provide concerned  
9 citizens an opportunity to have independent soil sampling  
10 done and to conduct the soil sampling and analysis in a  
11 scientifically-credible way. Do we have any more  
12 discussions on those items and those reasonable goals?

13 MS. ELOFSON-GARDINE: Yes. This was something  
14 that we have had a number of people talk over and over  
15 again, and we keep not getting to it at the meetings, and  
16 that's that there has been a number of requests to use the  
17 '89 gamma survey to coordinate that with our sample point  
18 to see if we can hit one of those.

19 MR. LAVELLE: Okay. Does that sort of fit--

20 MS. ELOFSON-GARDINE: Just as another--

21 MR. LAVELLE: --corollary to the scientific  
22 method.

23 MS. ELOFSON-GARDINE: We're talking about best  
24 guess of undisturbed area, et cetera. That might be a tool  
25 for us to coordinate best guess source.

1 MS. LOCKHART: Jim, do you have a comment on  
2 that?

3 MR. STONE: I was looking at this letter.

4 MR. LAVELLE: What was the--

5 MR. SCHONBECK: His aerial search.

6 MS. ELOFSON-GARDINE: The idea we use air '89  
7 gamma for cesium americium photo peaks to coordinate that  
8 with our sample suggestions to see if we can hit one of  
9 those in elevation.

10 MR. STONE: Yes. And I haven't seen the '89  
11 aerial.

12 MS. ELOFSON-GARDINE: Well, I have part of it. I  
13 have loaned it to Frontline and other people like that that  
14 are very slow in returning things. I have some parts, but I  
15 haven't found the whole one, but I'm working on a court  
16 case, and I can't go through my files. I did find some of  
17 them from an extra file I had. This one is cesium photo  
18 peaks, and there are some spots around Leyden and Broomfield  
19 and Westminster that people were interested in when this  
20 came out in '89, so I guess I can pass this around.

21 Some of the photo peaks, they show americium.  
22 They show a real good americium coming off the 903 pad here,  
23 so a lot of people have never seen these things. So it's  
24 kind of interesting to kind of look at.

25 I can pass this around so people can get a look

1 at it just so they have an idea of what it's about, but I  
2 have one. I don't know if we have an overhead, but some of  
3 these have been converted to overheads, if you want to look  
4 at them in overheads. We can all see them.

5 MS. MORIN: Yes, we do.

6 MS. ELOFSON-GARDINE: I was kind of ticked that I  
7 couldn't find my whole file this morning, but I tried.

8 MS. ABBOTT: While she's setting that up, I  
9 wondered if any of the people would be interested in having  
10 somebody right next to a site where we're doing the sampling  
11 by whatever protocol to also do what Dr. Johnson did, which  
12 is a dustpan and so on. I thought that would really be  
13 interesting.

14 MS. ELOFSON-GARDINE: He had--Martell has talked  
15 to me a couple of times about that, and he felt strongly  
16 that Carl was right in that approach. He went out there, he  
17 was doing rooftops, rain spouts, a lot of things, and he  
18 felt he had a lot of good results from that. And we should  
19 pull those old studies. I'm not sure they have that  
20 Western History archive properly set up so we can find it.

21 MS. ABBOTT: What I was wondering is right next  
22 to where we're doing a soil sample and also do one of--

23 MS. ELOFSON-GARDINE: Yes. We were, likewise,  
24 interested in that.

25 MS. ABBOTT: What Dr. Johnson did, evidently, is

1 took a whiskbroom and a dustpan and because he wanted to see  
2 the real--what was really suspendable and, most likely, to  
3 get back into the atmosphere and into people and so on and  
4 so, my understanding--now, I never asked him directly--Neils  
5 could probably tell us exactly what he did, but they kept  
6 saying a dustpan.

7 MR. SCHONBECK: And they also used a vacuum  
8 cleaner, and I forget what the ratio is, but it's something  
9 like 20 times the concentration of plutonium compared to  
10 soil that he found in dust. And Ed Martell has, in his  
11 commentary about our mission here, suggested that we do that  
12 as well. I think we have to be kind of careful about where  
13 we do that. I mean, it would be hard to--can we have a  
14 conversation here?

15 MS. ELOFSON-GARDINE: I'm sorry.

16 MR. SCHONBECK: Thank you. It would be hard to  
17 do that on grass or, you know, a lot of places that we're  
18 going to sample. Doing a whiskbroom is probably not going  
19 to be appropriate, for example, road surfaces, rooftops,  
20 porches, places like that. And I think if we pursue that,  
21 we save some of the sampling spots for that particular  
22 method, which I support. I think we have to consult with  
23 somebody about--for example, Ed Martell, about which sites  
24 we should pick. But I like that idea because that's out  
25 there, the notion, and it would answer the questions. It



1 would really reflect resuspension of existing contamination,  
2 I believe.

3 MS. ELOFSON-GARDINE: Would it be helpful if  
4 perhaps some of the structures that have been there for a  
5 long time, some of the old farmhouses--would it be revealing  
6 to perhaps take a sample of part of their roof material?  
7 Would it have absorbed and stayed put or run off into the  
8 gutters? That's the kind of question you might want to  
9 explore. For example, Jean Willis' house has been there a  
10 long time.

11 MS. ABBOTT: Not the house she's living in, but  
12 her son's home, which was the original farmhouse.

13 MS. ELOFSON-GARDINE: Would there be areas in any  
14 of those?

15 MS. ABBOTT: More likely in the barns and the  
16 sheds where you would find the dust accumulating.

17 MS. ELOFSON-GARDINE: Old haylofts.

18 MS. ABBOTT: Of course. If it's up on the roof,  
19 it's blown away.

20 MR. SCHONBECK: We need to think about what that  
21 sampling would indicate, be clear, because it will indicate  
22 something different from soil sampling. So I would like to  
23 have people who have thought about this more than I comment  
24 on it, but I like the idea of repeating Carl Johnson's work  
25 for a lot of reasons, you know, beyond just the scientific

1 issues as well, but I meant right next to where we do it.

2 Much of our soil is so barren, and you will have  
3 one little yucca plant, and you can decide whether there  
4 would be more deposition in front of the yucca plant. Does  
5 it act like a snow fence? Does it dump right behind it? I  
6 would be interested right there, where we're taking the  
7 one-inch deep or whatever sample, right next to it. We try  
8 with a dust broom just to see.

9 MR. HARRISON: I think that is a good idea, and I  
10 think any dust-fall sampling that doesn't have a soil sample  
11 associated with it could give you some data that would be  
12 very hard to interpret.

13 Something I would suggest that you might want to  
14 think about, they say that under fences is one place where  
15 dust tends to settle, so you might want to look right under  
16 fence lines, things like that, before and after yucca  
17 plants, that sort of thing might give you useful  
18 information.

19 MS. ABBOTT: I do know in the barrow pits when  
20 we've gone through a year with extreme drought and the  
21 barrow pits have formed all of this fine, fine silt, and we  
22 were so stupid years ago, we had the dump trucks bring it in  
23 and dump it at our house in Fort Collins. The college did  
24 test one bit of the soil that we had had dumped there, and  
25 they did not find anything, but after these dust storms, as

26

1 I say--these fine particles are in the barrow pits, and so  
2 that might be another idea too.

3 MR. MOORE: They didn't find anything or they  
4 didn't find anything that had any background?

5 MS. ABBOTT: I couldn't tell you. You would have  
6 to ask what's her name, your gal.

7 MR. STONE: Sharren Reuss.

8 MR. MOORE: They figure that the background--it's  
9 about three times what it is elsewhere on the Front Range  
10 and--

11 MS. ABBOTT: And what is it?

12 MR. MOORE: Nothing to worry about. I'm rather  
13 concerned about that myself.

14 MS. ABBOTT: What are they saying in the  
15 background?

16 MR. MOORE: I have a letter from him. I would  
17 have to look at it. I have a recent letter from him.

18 MR. STONE: That is part of our study that we're  
19 doing now is--which I will show you here in a little bit,  
20 but we are trying to characterize exactly what the  
21 background is in the Front Range, and we're taking ten  
22 different locations between the Wyoming border and  
23 Colorado Springs particularly and staying away from Denver.  
24 So we should be able to better define that, but I don't know  
25 what he told you in his letter either.

d1

1 MS. ELOFSON-GARDINE: This kind of goes back to  
2 what Harvey Nichols and Gale Biggs expressed, and that was  
3 Dr. Harvey Nichols from CU Boulder did his organic transport  
4 study, and he indicated that he thought pollen was a real  
5 carrier for perhaps transport mechanisms for hundreds of  
6 miles of a lot of these disbursed forms of plutonium, and  
7 that they are small, which is ambiguous here, and Gale's  
8 idea of sampling out east of I-25 and north of Highway 76,  
9 perhaps we can find an airway, as Bini suggested, that might  
10 be a collection point for some of these pollens and dust out  
11 there. There's lots of field areas and whatnot.

12 If we can follow the water flow as Gale Biggs has  
13 suggested, maybe we can find what would be best guess  
14 deposition area for dust out there too, which is something  
15 Harvey was very interested in trying to pursue. Just a  
16 suggestion to throw out while we're trying to brainstorm on  
17 a best guess for any of these areas.

18 MR. SCHONBECK: Jim, can I interrupt for a  
19 second? We're talking now about specific sampling  
20 locations, and I remember the last meeting that we had a  
21 concern that we hadn't gotten squared away on what our goals  
22 were in general and how to prioritize that.

23 This morning I typed up just--I didn't finish it,  
24 but I typed up a couple paragraphs on just the history of  
25 how we came to where we are today, and I would

1 like--eventually, I think the committee needs to have a  
2 written statement of our goals and our priorities. And what  
3 I put down on paper is just a starting point, and I don't  
4 necessarily think we need to do this now.

5 I would like feedback, and I want to know from  
6 the--this committee whether we should come up with a  
7 statement that we can all agree on at some point. We will  
8 have a report at some point. We will tell people, in  
9 writing, what we have done. So I would propose that we have  
10 that as an ongoing task, to write a goal statement that we  
11 agree upon, and then today I would suggest that at least  
12 some minimal agreement that our goal is not a statistically  
13 competent, scientifically complete sampling study, but that  
14 it is--that our first goal is to respond to the issue of  
15 public perception of the existing study in that we provide  
16 an independent route that is scientifically sound, but not  
17 necessarily statistically complete, and that's what we have  
18 been talking about today, but we haven't said it.  
19 Otherwise, we will not be able to set our priorities.

20 Again, whenever we approach the--when we will  
21 pick a site? Well, why are we doing that site? How can we  
22 fit this into the existing study? And then we can't come to  
23 a decision. What do people think? That's where we were  
24 last time.

25 MR. MARSH: I think you are right there

1 obviously. I think what you created here is a good start,  
2 although the last sentence was definitely treading on thin  
3 ice.

4 MR. SCHONBECK: Which one?

5 MR. MARSH: It starts with--

6 MS. ELOFSON-GARDINE: I didn't get one of those.

7 MR. MARSH: That's because you were late, Paula.  
8 Anyway, the other thing we could do in this, which I don't  
9 think is in here, is the fact that we're doing some things  
10 that the other people could have done but chose not to do,  
11 such as a literature search that we have done now. Nobody  
12 knew about that. You have been teaching that for as long as  
13 you have been teaching school, but the powers that be--and  
14 they are getting paid to do this--decided not to do it  
15 anyway.

16 So, conceivably we might make reference to the  
17 fact that we're doing things that the other people failed to  
18 do because they chose to fail to do it. And beyond that, I  
19 don't know. Maybe there's too much verbiage here.

20 MR. SCHONBECK: There certainly is.

21 MR. MARSH: You can get them down to 12 words  
22 sometimes.

23 MR. SCHONBECK: Part of that is a history of how  
24 we came to where we are. The reason we are doing this is  
25 not because sampling isn't being done; the public doesn't

1 trust the institutions that initiated the study. We don't  
2 have a reason to do a complete study. Why do that anyway  
3 because you duplicate what is unique about this attempt, and  
4 I think we need to be explicit about this.

5 MS. ELOFSON-GARDINE: Is there basic points of  
6 agreement, such as we all recognize, with our unique  
7 topography, that large amounts of contamination has been  
8 blown by the area, but we expect to find something?

9 MR. SCHONBECK: Well, that is a point.

10 MR. SCHONBECK: Page 3, essentially what I'm  
11 saying is the basic distinction here is not to get hung up  
12 on whether our sampling selections are going to be regarded  
13 as statistically sound. Last time I think it was--I forgot  
14 his name right now--Mike from EGG commented on what good  
15 would our data be. We couldn't answer him. We were  
16 confused about it. So what I'm suggesting is that we be  
17 very clear about what our sampling is going to do and that  
18 it is going to be scientifically sound and hopefully we can  
19 take the data and integrate it and it would be added to  
20 that, but to say that our data can be a stand-alone study, I  
21 think is a mistake. We have to be clear that it cannot  
22 stand alone and say what is the full contamination at  
23 Rocky Flats.

24 I want it to be clear that's not our purpose.

25 MR. HARRISON: Are you looking to validate or

1 invalidate existing data?

2 MR. SCHONBECK: Yes.

3 MR. HARRISON: Maybe you should state it that  
4 way.

5 MR. SCHONBECK: The reason that we had formed  
6 this is the recognition that Kim Grice's approach to the  
7 dossier construction is based on records that are  
8 nonexistent or highly existent. How can we respond to  
9 that? The only way is to go to the environment and say,  
10 "All right. What is there? But we don't have the funds  
11 nor the time to do a repeat, entire study. So what is it we  
12 can contribute?" The major thing is we bring in individual  
13 citizens to make the selection of the sites. That is  
14 unique.

15 So I would argue that that's our priority; that  
16 the first set of sites be selected by people that have  
17 expressed interest on this committee; and we got hung up the  
18 last couple of times whether we were going to do it that  
19 way.

20 I mean, is my perception shared by others?

21 MR. BROCKMANN: I think everyone understands that  
22 you have to do thousands of samplings in order to do a  
23 comprehensive study and relate all those samples in some  
24 kind of total. And so I think it's okay if we take our  
25 little pot of 40 or 50 samples and divide them into groups.



1 Maybe we can have three kinds of samples: One set would be  
2 those that resample areas where suspect institutions have  
3 already been in order to validate their work; maybe a second  
4 group going places where we feel, as citizens, they failed  
5 to sample; and maybe the third group samples where  
6 individuals just want to sample, their backyard or backyard  
7 samples. And that would sort of hit everybody's concerns  
8 and that would do it. It would, at least, meet my two goals  
9 of resampling where people have been but didn't work, or  
10 where they didn't sample the first time, and it would take  
11 care of Walnut Creek people who would want to be sampled.

12 I think we can do all those things. I don't  
13 think we need to keep them in comprehensive studies. They  
14 are stand-alone studies in a sense if I have 50 individual  
15 studies can't be related together because there's not enough  
16 of them to make a study off of.

17 So, for those who were listening, does that make  
18 sense?

19 MR. SCHONBECK: Maybe we should take a break and  
20 have people look at aerial photos so we can come back.

21 MS. ELOFSON-GARDINE: There's one on the wall, if  
22 people will want to look at that during the break. A is the  
23 lesser concentration and going up to D, which is the higher  
24 concentration.

25 MS. MORIN: Paula, can you point those out

1 because I can't see them from here.

2 MS. ELOFSON-GARDINE: The other the americium  
3 from the 903 pad--and a lot of interest was generated by  
4 these C areas of C concentration south of the plant around  
5 Leyden and in pockets here and there. Here's a D spot here,  
6 northwest of the spot which goes with LeRoy's concern about  
7 anything around Boulder at all. There is another D spot  
8 over here.

9 MR. MOORE: What does D mean?

10 MS. ELOFSON-GARDINE: The highest photo peak on  
11 this particular survey around Chautauqua Park--maybe you can  
12 find where that would lie and try to sample around there.  
13 And there was a D spot here. There's a spot on the other  
14 side in Broomfield and in Countryside there were some higher  
15 spots too, so this is just an idea that a number of us have  
16 kicked around for quite some time, which was to try to maybe  
17 coordinate a little bit of that and, I guess, to compare.

18 MR. MOORE: This is all americium?

19 MS. ELOFSON-GARDINE: That is americium  
20 isoplate.

21 MS. ABBOTT: I don't think that would be up in  
22 Chautauqua Park.

23 MS. ELOFSON-GARDINE: This is that americium spot  
24 coming off of the 903 pad. You can see that there's been  
25 certainly some seepage and ingrowth that has spread, and so

1 those were all points of interest the people have looked at  
2 that demonstrates that things aren't staying put in addition  
3 to the water surface with water runoff and wind spread and  
4 what not.

5 MR. SCHONBECK: On that one, on the left-hand  
6 side, those circles, that looks like you have the highest,  
7 what is--

8 MS. ELOFSON-GARDINE: This is near the railroad  
9 spur where they had some spills and problems.

10 MR. SCHONBECK: That's higher than the 903 pad?

11 MS. ELOFSON-GARDINE: Yes. And this is the  
12 plutonium compound in here. This is 776, I believe, over  
13 here, and this is building 446. This is where the local  
14 impact initiative wanted to prioritize, which we objected  
15 to.

16 MR. MARGULIES: Pretty localized.

17 MR. HARRISON: You are not seeing anything  
18 outside the buffer zone.

19 MS. ELOFSON-GARDINE: This is what they focused  
20 on, on sites. I think they had also done--I can't find my  
21 whole file on this, but this was what we were interested in  
22 trying to look at in terms of coordinating where they were  
23 saying.

24 MR. SCHONBECK: You are looking at cesium here?

25 MS. ELOFSON-GARDINE: Cesium and americium being

1 the markers they are using for screening.

2 MR. SCHONBECK: But the cesium is going to mark  
3 fallout, but not Rocky Flats--

4 MS. ELOFSON-GARDINE: They are saying that they  
5 are using cesium for whether or not an area has been  
6 disturbed for worldwide fallout; that if you try to hit  
7 those high spots, you may be finding an area that is least  
8 disturbed; and that's the concern about trying to coordinate  
9 that. That might make some sense.

10 MR. SCHONBECK: It's important to make that  
11 statement too; cesium is disturbed versus undisturbed soil.

12 MS. ELOFSON-GARDINE: And that's why people were  
13 interested in trying to use this as kind of a key-screening  
14 guide, as something that might make some sense to somebody.

15 MR. MARSH: Does anyone know what these surveys  
16 cost?

17 MS. ELOFSON-GARDINE: A lot of money.

18 MR. MARSH: They don't take that long.

19 MS. ELOFSON-GARDINE: It might be an additional  
20 tool we can use to do the additional screening.

21 MR. MARSH: If the cost of this isn't that bad,  
22 maybe it wouldn't be a bad idea to use the similar  
23 technology further to the east or maybe even towards Boulder  
24 to expand the study.

25 MR. WINSOR: Do you know whether it was fixed

1 wing or helicopter?

2 MS. ELOFSON-GARDINE: That was the helicopter.

3 MR. HARRISON: About \$750 an hour.

4 MR. MARSH: What do we have here? Fifty grand or  
5 something? How long does it take?

6 MR. HARRISON: The slower you go, the better.

7 MS. ELOFSON-GARDINE: Greg, I think I have got  
8 the figures that they had in the original report. I think  
9 they spent like 500 hours to create this.

10 MR. MARSH: 500 hours?

11 MS. ELOFSON-GARDINE: And it shows you a pattern  
12 of the copter flight. These are all lines of copters going  
13 back and forth. So it took a lot of effort to create that.

14 MR. BROCKMANN: Are we prescreening the sites  
15 before we took the soil sample and all of that? Because we  
16 don't need to replicate that with what the helicopter did.

17 MS. ELOFSON-GARDINE: No. That might be able to  
18 help which is the most undisturbed.

19 MR. SCHONBECK: What I can suggest is we can use  
20 the aerial surveys to fill in up to the 40 sites. It might  
21 suggest places that have not already been picked. That's  
22 how I would propose that we use these.

23 MS. ELOFSON-GARDINE: That's the idea.

24 MR. BROCKMANN: If the D and C--I think that is a  
25 worthwhile place to go.

1           MR. LAVELLE: The other thing is that D and C  
2 would be, as opposed to undisturbed, is a place where stuff  
3 tends to collect a deposition zone as opposed to an erosion  
4 zone, I assume.

5           MR. STONE: It could be where snowdrifts occur  
6 that's accumulating fallout, global fallout.

7           MR. LAVELLE: Another reason to look at the C and  
8 D areas, if we have a sample somewhere close, just move it  
9 into that.

10          MR. BROCKMANN: Maybe after we have the spots  
11 picked, we can use this information to zero in on where the  
12 sample was taken.

13          MR. LAVELLE: You need to tell us exactly where  
14 to go to get permission.

15          Okay. We're bouncing back and forth between  
16 goals and specific samplings here. And I'm not sure what  
17 exactly we want--how we want to go. And so I'm certainly  
18 open to suggestions of whether we want to continue a  
19 discussion of the goals or do we want now to really try to  
20 hammer out at least a few specific locations where we're  
21 going to take a sampling no matter what the goal is,  
22 perhaps?

23          MR. KORKIA: I want to suggest today a settlement  
24 first, and we're going to have snow anytime. It would be  
25 nice to have sampling before winter sets in.

1 MR. LAVELLE: That's a good point. So do you  
2 want to, at this point, just go through this map and try to  
3 pick out as many as we can that we know we are going to want  
4 to sample and give Todd some--

5 MS. ELOFSON-GARDINE: Top five or top ten list.

6 MR. LAVELLE: Even if we don't get all of them,  
7 there may be some we can't, but at least we can go on and  
8 perhaps all of us can read through this that Neils put  
9 together and maybe even write out some of our own objectives  
10 or goals for next time.

11 MR. SCHONBECK: I'll continue this. As I said,  
12 this was the first page. There's a whole nother two pages  
13 of specifications in my head. Of course, as I read it, I  
14 would take out my verbiage and quips that are not necessary  
15 but sort of entertainment for 8:30, but if you--well, I'll  
16 continue to work on this. And if that's all right with you,  
17 give me your comments, and if you don't like this, I'm not  
18 attached to it, write your own, but let's come up with  
19 something that is ongoing. I don't think we need to finish  
20 this before we pick sites.

21 The last meeting we came to the point where we  
22 had 20 to 30 sites that we could start with. I suggest we  
23 go with those. And the next step is to get the addresses of  
24 the landowners and to continue with that.

25 I think the question that is not clear to me is,

1     What sampling methods have we finally decided on? Should we  
2     discuss that? Are we going to--in other words, what was the  
3     conclusion--that we're going to take a square foot and go  
4     one inch down and pack that into a can and take it and do  
5     the laboratory specifications of that to figure out our  
6     basic survey?

7                   MS. ELOFSON-GARDINE: One inch?

8                   MR. SCHONBECK: I think that's what it was.

9                   MR. LAVELLE: Two and a half centimeters--or was  
10    it three?

11                  MR. STONE: We have been sampling three  
12    centimeters at CSU, which I think it would be good since we  
13    are only talking about a half centimeter anyway.

14                  MR. SCHONBECK: Let's do it the same, Jim. That  
15    way we have a database to compare it with and a consistent  
16    sampling method.

17                  MS. ELOFSON-GARDINE: So three, did you say?

18                  MR. STONE: Three centimeters.

19                  MR. LAVELLE: What we have is--Jim is prepared  
20    here to talk about what this sampling protocol might look  
21    like. Is everybody--I haven't been here, so I don't know if  
22    everybody is clear on this 20 or 25 sites that we have  
23    decided on, or do we need to go through those again? Should  
24    we do that first and have Jim talk to us about the sampling  
25    protocol?



1 MR. KORKIA: I think that would be a good idea  
2 and use Bob's suggestion of three categories, if we can keep  
3 those in mind.

4 MR. MOORE: Yes.

5 MR. BROCKMANN: At least be clear why we are  
6 taking that sample.

7 MS. ELOFSON-GARDINE: I think a lot of our  
8 sampling ideas have been--are the No. 2 category, no prior  
9 sampling at the site.

10 MR. LAVELLE: So it's validate, past sampling,  
11 sample where no man has gone before, and--

12 MS. ELOFSON-GARDINE: A few private concerns.

13 MR. MOORE: What is the third one?

14 MR. LAVELLE: Private concerns. People say, "I'm  
15 worried about this location."

16 MS. ELOFSON-GARDINE: Last time we had come up  
17 with an idea of grouping a number of these on the chart on  
18 the wall here. We had talked last time about grouping what  
19 was the Walnut Creek grouping. We figured the area to the  
20 west side of Walnut Creek would probably be the least  
21 disturbed and that that was an area of compromise since most  
22 of the area that we had one, two, three, four, five, or six  
23 ideas of sampling in that area. Some of them came where  
24 there were streets and obvious tons of topsoil had already  
25 been removed and that the chance of catching a decent sample

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1 would probably be to the west side of that little  
2 subdivision and try to find something that's relatively  
3 undisturbed over there and try to sample that.

4 And another grouping area was up here on the  
5 northwest corner of the facility where we thought there may  
6 be some preexisting data to look at.

7 So the idea was to look at that data and decide  
8 if it warranted a further check or we could eliminate those  
9 points here. So these areas here are the ones that we  
10 thought might not be necessary.

11 Neils suggested NCAR, and I think that was this  
12 one here.

13 MR. SCHONBECK: No, I didn't suggest it.

14 MS. ELOFSON-GARDINE: Was it supposed to be  
15 NCAR? I thought this was it.

16 MR. MARGULIES: It's not far enough north to be  
17 NCAR.

18 MS. ELOFSON-GARDINE: It was supposed to be NCAR  
19 and LeRoy suggested Chautauqua Park. And was it Bob  
20 Brockmann that brought this over here up? And we have a  
21 couple of C and D spots up there, which Bob suggested he is  
22 willing to try to aim for that. Bini suggested this map  
23 isn't the same as some of the others that we prepared.

24 MS. ABBOTT: And that was Ed Martell.

25 MR. ELOFSON-GARDINE: Pine Cliff was suggested

1 west of the facility and also the suggestion was the mouth  
2 of Coal Creek Canyon.

3 MS. ABBOTT: Plainview.

4 MS. ELOFSON-GARDINE: Plainview, pardon me. You  
5 are right, it's Plainview, west of the facility, and there  
6 are some homeowners up there that were receptive when we  
7 took a couple of different film crews up there, and they  
8 would be receptive to sampling, and it's all the way up at  
9 the very end of the road going through Plainview. I would  
10 probably have to go with you because it's hard to find.

11 MR. STONE: Up in Coal Creek Canyon?

12 MS. ELOFSON-GARDINE: No, it's before you go into  
13 the canyon. So that's what Bini suggested. The corner,  
14 somewhere across the corner of Highway 72 and 93.

15 MS. ABBOTT: Which is on--it's owned by the  
16 State Lands Board Panel.

17 MS. ELOFSON-GARDINE: Somewhere around here, and  
18 I believe there is a D spot that we could try to aim for  
19 perhaps. So that's another one. And then we had a call  
20 from Tennessee. We got calls from various parts of the  
21 country of people saying they used to live here, and they  
22 are concerned about people falling through the cracks. They  
23 have become another part of a state's death statistics.

24 One of the calls we received from Tennessee is  
25 that they were interested in a point closer to northernmost

1 Golden and some of the unincorporated areas where they used  
2 to live. And I think that point is probably close to  
3 Golden, just south of there, I believe.

4 So there's a number of areas that are still  
5 fields that hopefully kind of fall into some of these ranks  
6 that we can try to find something. And, again, maybe use  
7 that as a help towards screening.

8 The other cluster areas tend to be kind of in a  
9 circumference around the facility. We added something  
10 around Superior. There is a field over here that is not on  
11 this map that is right here and then Gale's point.

12 So we added a few that weren't on here before.  
13 One was directly north because they have added all sorts of  
14 subdivisions here that people were worried about. And most  
15 especially, that category Bob mentioned about where a  
16 suspect organization had gone before. Bini and I have  
17 butted heads about which Ralston school is the right Ralston  
18 school.

19 So I think those are specific sites that we  
20 definitely have a must sample underlined at. So I think we  
21 probably have a number of specific sites that we can  
22 identify that we don't want to have knocked off the list.  
23 Other than that, I think the rest are somewhat variable.

24 MR. KORKIA: Jim Stone has the three inlets to  
25 Standley Lake, and by what he's talked about, I got the

1 impression that would be more sediment sampling than it  
2 would be dry soil sampling. So how would we accommodate his  
3 desires?

4 MS. ABBOTT: Right now the inlets--some of them  
5 are bone dry--well, most are bone dry, and this might be a  
6 good time, and the lake is receding because, of course, the  
7 inlet changes. At times the inlet is under water until  
8 October.

9 MR. MARSH: The inlets or the outlets?

10 MS. ABBOTT: The inlets.

11 MR. MARSH: The west end of--

12 MS. ABBOTT: As they bring water in Standley  
13 Lake, it varies by acres and acres and acres of its low  
14 amount of water that it holds from--it's going down now. In  
15 other words, it hit its full peak and held it for about a  
16 month from about June 15 to July 15, and then, as water is  
17 taken out, it starts to recede. In other words, next to our  
18 house, at the edge of our fence, pretty soon it will be a  
19 solid field going across with no water, and as the inlets  
20 come in--what I'm trying to say is where it joins, the  
21 present water would vary by a block easily from high water  
22 and low water because Standley Lake is just--dammed across a  
23 valley, kind of.

24 And so, in other words, in most places, the water  
25 level just changes very, very gradually. It's not as if

1 they dug out a pit, you know, to make the lake. So maybe we  
2 should check with Jim and see really what his ideas were.  
3 Did he mean after it crosses Alkire and somewhere along the  
4 bank right there of the streambed, or as it actually enters  
5 the lake, which varies according to the time of year?

6 MR. LAVELLE: So is that okay? Should we table  
7 consideration of those points for the time being? I think  
8 there's also some sampling. How do you want to take the  
9 sample setting?

10 MR. KORKIA: We talked about this before our  
11 meeting, and he wants those three propositions. So I don't  
12 know if those are standard features of Standley Lake because  
13 you are describing how it changes.

14 MS. ABBOTT: Can you point out the three  
15 propositions?

16 MR. LAVELLE: Here, here, and here.

17 MR. KORKIA: They should be along the shoreline.

18 MR. STONE: You might want to put up the map that  
19 Todd has got that was a map I got the other day where I  
20 already assigned sample numbers, so we can say CES-15 and  
21 know what we're talking about, because right now we are  
22 pointing towards inlets to Standley Lake.

23 MR. SCHONBECK: Good suggestion. Where is the  
24 map?

25 MR. STONE: Todd, put your map up. I highlighted

1     them, and that's what he's going to use to find the property  
2     owners' addresses.

3             MR. LAVELLE:   It's essentially the same map, just  
4     blown up.

5             MR. STONE:   I highlighted and put sample numbers  
6     on it and corresponded them to our list.   That was passed  
7     around and pretty well just followed in order which ones  
8     we've already made as suggestions.   And then I think the  
9     next thing that needs to be done is you might have to  
10    rethink about what your budget is, because I'm hearing about  
11    \$100,000 worth of sampling ideas floating around in the room  
12    today.   But as Paula suggested, maybe consolidating where  
13    you have some groups, particularly the Walnut Creek area;  
14    there's five or six samples suggested in that area.   Also a  
15    grouping of two to three or four in the northwest part of  
16    Rocky Flats.

17            If you can consolidate, you may be able to get  
18    more information here for sample locations when you're  
19    talking about a general area anyway.   There are some  
20    specific things, such as the inlets to Standley Lake.

21            Would it be good to start with one of those and  
22    go from there?   And that was a question I made on that piece  
23    of paper too, because was he talking about sampling the  
24    sediments or was he talking about sampling the soil in the  
25    area?

1                   Since we're talking about soil samplings,  
2 sediment sampling typically would be a different protocol  
3 than soil sampling, so it's hard to compare.

4                   MR. KORKIA: So his material from runoff would  
5 accumulate in those inlets, so it would probably be a dry  
6 sample now that the lake has receded back.

7                   MR. LAVELLE: If we can agree, let's table those  
8 samples right now, and hopefully, we can get Jim to talk a  
9 little bit more, and we may have to think about those  
10 specific issues.

11                   Why don't we, if it's okay--let's go through all  
12 of those sample locations that Paula just pointed out and  
13 put an X by it.

14                   MR. MOORE: How about highlighting them?

15                   MR. LAVELLE: And we will highlight them on the  
16 map and see what we come up with and what we agree on.

17                   MR. SCHONBECK: I like what Jim did. He has the  
18 list that we originally came up. We have sample numbers.  
19 Let's make sure we are talking about those sample numbers  
20 first.

21                   MR. LAVELLE: Absolutely. And we'll do them on  
22 this. And I think by looking at what Paula described on  
23 this map and going back and forth, we will be able to keep  
24 those in mind.

25                   MS. ELOFSON-GARDINE: Shall we have somebody



1 point at both maps?

2 MR. LAVELLE: Let's start up here if we can. Up  
3 here at the one up--start up here towards Chautauqua Park.  
4 The stamp number on the map here is CES-24. Now, that was  
5 one. I think, Bob, was that you? Yes. Bob suggested that,  
6 and it was also suggested that perhaps there's a bunch of C  
7 areas up here and a little part of D. I think that's up  
8 towards there, but not quite that far north. Maybe we can  
9 identify that.

10 MR. STONE: That's on site.

11 MR. LAVELLE: This?

12 MR. MOORE: I don't think so.

13 MR. MARSH: No, that's not on site.

14 MS. ABBOTT: Pretty darn close, if it's not,  
15 because Standley Lake is only three miles and that's  
16 Standley, and it's only three miles.

17 MR. LAVELLE: That's probably for these down  
18 there, so I guess the thing is, this is one of those samples  
19 that we take because nobody has sampled there before,  
20 right? And is that in agreement? Do we want to take a  
21 sample up there and Bob can basically say this is kind of an  
22 area, try to pick an undisturbed area?

23 MR. BROCKMANN: I was going to work with Todd,  
24 and we were going to get permission to sample somewhere.  
25 It's a city-owned park, and we will find an undisturbed area

1 that is facing southeast where it hits the Front Range and  
2 it goes this way. So we will find a catcher's mitt.

3 MR. LAVELLE: Find a place that will catch that.

4 MR. MOORE: In the area which is the front end of  
5 Chautauqua Park.

6 MR. BROCKMANN: That has been pretty well  
7 developed, hasn't it?

8 MS. ABBOTT: Oh, no. On the mountain side?

9 MR. SCHONBECK: A lot of people use that area,  
10 but it hasn't been developed.

11 MR. MARSH: Hasn't been graded by bulldozers?

12 MR. SCHONBECK: Right.

13 MR. MARSH: The bulldozer will totally destroy  
14 it.

15 MR. BROCKMANN: You are talking about--

16 MR. MOORE: Off to the side of that.

17 MR. BROCKMANN: We can look at that.

18 MR. LAVELLE: Okay.

19 MR. MOORE: Where were you thinking of when you  
20 say Chautauqua Park, everything had been disturbed there?

21 MR. BROCKMANN: Not if you hike up.

22 MR. STONE: I drove by it the other day.

23 MR. BROCKMANN: I wanted to get up--

24 MR. MOORE: You want to be up in the Flatirons  
25 somewhere.

1 MR. BROCKMANN: You know where everyone goes to  
2 fly their kites? If you hike southwest and you go around  
3 the corner, it's not the third Flatiron, but it is on this  
4 side of Flagstaff, not Flagstaff Mountain. I have a spot in  
5 mind, but it is not NCAR, it's further north than that. I  
6 was trying to get up in elevation.

7 MR. SCHONBECK: It's possible we can do both.

8 MR. LAVELLE: Are we in agreement?

9 MR. MOORE: Somebody needs to look around there  
10 and pick a good place and do some walking around.

11 MR. BROCKMANN: Do you want to join us?

12 MR. MOORE: Go for it.

13 MR. SCHONBECK: So let's agree on that.

14 MR. LAVELLE: Are we in agreement that we will  
15 take that sample up towards NCAR, Chautauqua Park, and let  
16 Bob and Todd basically decide on an appropriate location?

17 (No response.)

18 MR. LAVELLE: Hearing no objections, we will put  
19 that down as sample one. So that's CES-24 that we're going  
20 to take.

21 MS. LOCKHART: What does the 24 stand for?

22 MR. SCHONBECK: 24th on this original list.

23 MR. LAVELLE: Okay. Let's see, the next sample  
24 was this one in this area, CES-03, the mouth of  
25 Eldorado Canyon. I think that this was--the purpose

1 of--this, again, hasn't been sampled before, I don't think  
2 anywhere. I don't remember a sample there. And this was,  
3 again--some of those--this was dealing with the airflow  
4 going up and down the canyons.

5 MR. MOORE: That will be a lot closer than this D  
6 that's on the map here--no, this is out in the plains from  
7 the mouth of the canyon.

8 MR. LAVELLE: Right.

9 MR. MOORE: I wish it was possible to know  
10 exactly where that is.

11 MS. ELOFSON-GARDINE: We were just looking at  
12 this, and it looks like this is not to scale, because if you  
13 look at the actual aerial that is color, it is a lot easier  
14 to see. You can see this point here correlate with the  
15 point right above that D area there. That looks like it's  
16 way out. It's not as far out on this map as it appears  
17 here. So this is actually far closer and they coordinate  
18 clear to these points. So it's not way up there.

19 MR. LAVELLE: So whose point was  
20 Eldorado Canyon? Okay. That was Ken's. Is that a  
21 reasonable sample? Do we want to say go ahead and take that  
22 sample and let Ken with work with Todd for a location?

23 MR. MARSH: Yes, that's a good idea.

24 MS. ABBOTT: One thing I think of, they are in a  
25 line, and in Eldorado Canyon and Chautauqua Park, if we

1 sample the first one first and it becomes of no concern  
2 because of flow ratings, do we want to go further out on  
3 that same tangent?

4 MR. HARRISON: Then you are talking about getting  
5 your results for one sample before the next one.

6 MS. ELOFSON-GARDINE: Bini, I think the sample of  
7 this cesium map--it shows you that this distribution is very  
8 random, and so I think it's hard to rule out any one area  
9 because all you are getting is really a very light screening  
10 by anything we do, and it's certainly not conclusive because  
11 it's not like you have a blanketing of the whole area  
12 because of all the different variables involved.

13 MS. ABBOTT: And I think, too, each interested  
14 party should have at least one hopefully on this first  
15 list. So that's a good point.

16 MS. ELOFSON-GARDINE: I agree with that.

17 MR. LAVELLE: So Ken will work with Todd on the  
18 Eldorado Canyon. That's CES-03.

19 MS. ELOFSON-GARDINE: Do you want to write that  
20 on the board?

21 MR. LAVELLE: I wish we had a highlighter. Maybe  
22 I will draw a red line.

23 MS. ELOFSON-GARDINE: Use green.

24 MR. LAVELLE: Okay. We will use green for go.

25 Okay. CES-22, is this one that is--I guess that's not the

1 mouth of Coal Creek Canyon.

2 MR. MARGULIES: Southwest of Marshall Lake.

3 MR. LAVELLE: Southwest of Marshall Lake. Whose  
4 sample was that?

5 MR. MARGULIES: Bob's.

6 MR. LAVELLE: That's Bob's. Now, that area, I  
7 think, is going to be sampled at least in the  
8 EPA/DOE Superfund stuff. They have several samples that run  
9 north of the buffer zone boundary there.

10 MR. BROCKMANN: What was the number again?

11 MR. LAVELLE: CES-22. Okay. Do we have a  
12 consensus on that particular sample?

13 MS. ELOFSON-GARDINE: If that's already going to  
14 be sampled by EPA, do we want to spend money on it?

15 MR. BROCKMANN: That would be a No. 1.

16 MR. LAVELLE: Number 1 probably is validate.  
17 They probably won't sample the same area, but there's a  
18 series of four that go across.

19 MS. ABBOTT: Jim, I can't see. Where are you  
20 talking?

21 MR. LAVELLE: Let me get on the other side.

22 MR. BROCKMANN: Do we know exactly where they are  
23 going to sample?

24 MR. LAVELLE: Not exactly. The last time I  
25 looked, they hadn't taken those samples yet, so they were

1 preliminary locations, and they went along the top  
2 here--about four samples right along the north side.

3 MS. ELOFSON-GARDINE: As long as we keep track  
4 and follow through because we want to know what their  
5 results look like so it doesn't fall through the cracks.

6 MR. LAVELLE: I don't know what the timing would  
7 be.

8 MR. BROCKMANN: If we were going to do that, I  
9 would be interested in doing it real close to where they are  
10 doing theirs because it's too close to what they are doing  
11 to be a new area, and it's not a private concern.

12 MS. ELOFSON-GARDINE: Mark that as a validation  
13 sample.

14 MR. LAVELLE: CES-22 will be a validation  
15 sample. And why don't we have Bob and Todd contact  
16 Mike Guillaume and get a better idea of where they will take  
17 their sample up and try to--Mike Guillaume, he's project  
18 manager for EGG for the off-site samplings. So he will know  
19 whether that's been taken or not or about where they think  
20 they will take it if it hasn't been done.

21 MR. BROCKMANN: They are going to do it soon.  
22 Maybe they can do it the same day.

23 MS. ELOFSON-GARDINE: There is a D spot along  
24 this ridge closer to the north, almost direct north, but  
25 kind of northeast slightly, if you look at this. See, right

1       there. So there is a D spot on the side.

2               (Discussion was held off the record.)

3               MR. LAVELLE: So, Bob, you are going to work with  
4       Todd and maybe Mike to figure out where to place this one,  
5       right?

6               MR. BROCKMANN: You have to speak up. We're  
7       going to drive around in the van.

8               MR. LAVELLE: So there's three. Now, there were  
9       some sites up here in the northeast corner--the northwest  
10       corner of the buffer zone.

11              MR. MARGULIES: For those of you who have the  
12       original site recommendations, which is what we have been  
13       using, Jim and I--if you look at No. 117 and 32, they are  
14       all very, very close together.

15              MS. ELOFSON-GARDINE: Does that include all of  
16       them that have been added in the subsequent meetings?

17              MS. LOCKHART: No, it doesn't.

18              MR. MARGULIES: No, it doesn't, but the bottom  
19       line is that they are probably all close enough that we may  
20       only need one or a maximum of two in the area.

21              MS. ELOFSON-GARDINE: There's a lot that have  
22       been added since that first list went out.

23              MR. MARGULIES: Okay.

24              MR. LAVELLE: Hopefully this is a fairly  
25       comprehensive list, this map. But let's think for right now



1 about this northeast corner.

2 MS. ELOFSON-GARDINE: There is--

3 MR. LAVELLE: Do we want to sample up in that  
4 area?

5 MR. MARSH: I proposed that site, and the purpose  
6 of the proposal was to see if there was an undisturbed area  
7 of plutonium that may be mined in the future by the  
8 Jefferson County road people as there are with other  
9 aggregates from the same area, but the sample has to be  
10 taken from an area that is undisturbed and should be a  
11 surface sample.

12 I don't know how many are proposed there, but  
13 that's what I'm looking at, and that was my philosophy when  
14 I chose that point.

15 MR. LAVELLE: Okay.

16 MR. KORKIA: That's one of my areas.

17 MS. ELOFSON-GARDINE: There is one D spot in that  
18 very corner. We can try to pinpoint it.

19 MR. LAVELLE: It maybe a deposition zone.

20 MR. MARSH: Let's do it for that, then.

21 MR. LAVELLE: I think there's about three or four  
22 people that wanted to sample up there. Can we put this into  
23 a single sample?

24 MR. MARSH: I think so.

25 MR. LAVELLE: In the buffer zone close to the D

1 spot.

2 MS. ELOFSON-GARDINE: If you can get that, that  
3 would be a good area.

4 MR. LAVELLE: A lot of that is C anyway, so it  
5 won't be bad anyway.

6 MS. ELOFSON-GARDINE: There is a D spot there.

7 MR. LAVELLE: That looks disturbed, though  
8 different vegetation. One sample, northwest corner of the  
9 buffer zone. Try to hit that spot. That might be a  
10 collection.

11 MR. MOORE: Northeast corner.

12 MR. MARGULIES: Northwest.

13 MR. LAVELLE: Northwest. We are going to come up  
14 here. I keep saying northeast when I should say northwest.  
15 It's northwest. So one sample, we'll call it CES-01--CES-01  
16 that we will take up here. So now we have four. We're  
17 cruising right along.

18 MS. LOCKHART: And the purpose of that?

19 MR. LAVELLE: The purpose of that one will be--I  
20 don't know if that's really going to be sampled.

21 MR. HARRISON: It's been sampled in the past.

22 MR. KORKIA: But it is in that area?

23 MR. LAVELLE: So this probably fits into the  
24 validation mode.

25 MS. ELOFSON-GARDINE: Yes, validation sample.

1 MR. LAVELLE: Okay. There's one out here by  
2 Stearns Lake, CES-23.

3 MR. MARGULIES: That is also Bob's.

4 MR. BROCKMANN: I lost my description.

5 MS. ELOFSON-GARDINE: I think we are interested  
6 in finding a likely collection right there.

7 MR. BROCKMANN: Here it is. There's open space  
8 out by--it says, in Rock Creek Farm.

9 MR. LAVELLE: Oh, this is in the Rock Creek  
10 drainage?

11 MR. BROCKMANN: Yes.

12 MR. LAVELLE: Okay.

13 MR. BROCKMANN: And that, again, was--

14 MR. LAVELLE: We are talking about soil sample,  
15 not a sediment sample.

16 MR. BROCKMANN: It was a sample of the area  
17 trying to look at their flow.

18 MR. LAVELLE: This was maybe those airflows down  
19 the creek and perhaps hitting a wide spot there and drop  
20 things out. Well, what do we think? A spot that hasn't  
21 been sampled before?

22 MS. ELOFSON-GARDINE: Area sample.

23 MR. LAVELLE: Another one of these new areas,  
24 CES-23. Okay. Bob, I guess you are up with Todd again on  
25 finding out exactly where we are going to go with that.

1                   MR. MARGULIES: I think Bob and I can do the  
2 legwork and find out where to send the letters. Jim Stone  
3 definitely has to be involved with the physical location  
4 picking.

5                   MR. MARGULIES: Speak of the devil.

6                   MR. STONE: I can't leave the room.

7                   MR. MARGULIES: Not that Bob won't be involved,  
8 but Jim has to be involved as well.

9                   MR. BROCKMANN: Ken will come with us too. Five  
10 or six in Boulder county and hit them all, a group effort.

11                   MR. LAVELLE: Yes. Don't let my indications of  
12 who to go deter you at all. Just go, whoever wants to  
13 participate.

14                   Okay. Shall we look at--there's a whole bunch of  
15 sites down just west of Walnut Creek.

16                   MS. ELOFSON-GARDINE: There is a C area in the  
17 aerial survey near the west end of the Walnut Creek area.

18                   MR. LAVELLE: Down here.

19                   MS. ELOFSON-GARDINE: There is a C area, and that  
20 goes right next to the west side of the Walnut Creek area,  
21 so it would be approximately there. This map is not to  
22 scale.

23                   MR. LAVELLE: It's hard to make out, we know. I  
24 think we can.

25                   MS. ELOFSON-GARDINE: So about maybe here. This

60

1 is more like it in here.

2 MR. MARGULIES: CES-04?

3 MS. ELOFSON-GARDINE: Yes.

4 MS. ELOFSON-GARDINE: Somewhere in there.

5 MR. MARGULIES: Now, you will have to remember,  
6 when we are selecting these sites--and I think Jim would  
7 concur with this--if we're looking at a quote unquote exact  
8 locations, that it's disturbed, we might have to move it.  
9 When I'm talking to landowners, obviously I will get the  
10 landowners for the specific sites we're looking at, but I  
11 will also get landowners adjacent to them. If we run into a  
12 problem where it's disturbed by a landowner, I will have  
13 landowners adjacent to that, so I don't have to play the  
14 game over again.

15 And I think, again, in order to facilitate  
16 expedience, if you will, whether it's Jim who's going to be  
17 out in the field or myself or Bob or whomever is along on  
18 tour for picking sites, I don't think it's something we  
19 should bring back to the committee. There has to be a  
20 decision, "Well, we can't put it here, but 350 yards over  
21 here," something like that. But that leeway should be  
22 allowed for the people that are out there to keep things  
23 rolling.

24 MR. SCHONBECK: I think that's a good idea.

25 MR. LAVELLE: And we will have members of the

1 committee out helping to pick the sampling locations anyway.

2 MS. ABBOTT: If that person making that request  
3 is along, that's even better. So, in other words, it would  
4 be real important to have Greg along when you are talking  
5 about--of course, that's on site, but when you are talking  
6 about that particular site, the various--

7 MR. MARGULIES: If they can be there, I agree  
8 with you. I myself defer to the field experts, the people  
9 who have done tons of samplings, myself or especially Jim,  
10 who, I think, you know, can, while they are out there, make  
11 that decision and feel confidence with that. I would love  
12 to have whoever out there so people are happy. I'm saying  
13 if you run into that kind of scenario, let the people out  
14 there go ahead and move it to another property.

15 MS. ABBOTT: But let's put down the request by  
16 the name of each specific site so that they are contacted.

17 MR. MARGULIES: I am doing that as I go along.

18 MR. LAVELLE: Okay.

19 MR. SCHONBECK: This might be a good time to ask  
20 the question: How are we going to document the sites, this  
21 very specific spot on the ground? We talked about taking  
22 photographs of the area and, then, perhaps I would also  
23 suggest that we keep a journal.

24 MR. MARGULIES: We do a field log, that's a  
25 given.

1 MR. SCHONBECK: And that be accessible at a later  
2 date.

3 MR. LAVELLE: You have your satellite locating  
4 stuff. What do they call it?

5 MR. STONE: Global placement.

6 MR. MARGULIES: I'm sure he carries it with him  
7 at all times.

8 MR. LAVELLE: Okay. One thing we need to decide,  
9 is this going to be one sample here west of Walnut Creek  
10 where we have at least five?

11 MS. ELOFSON-GARDINE: We talked about that at the  
12 last meeting and had pretty much come up with a consensus  
13 that it should be in the disturbed area.

14 MR. LAVELLE: One sample.

15 MR. KORKIA: Do we have a different category of  
16 criteria? New area.

17 MS. ELOFSON-GARDINE: I think this falls under  
18 two and three.

19 MR. STONE: I drove by. I drove through there  
20 the other day just to take a look at it, and it looks like  
21 the area particularly just to the north of the Walnut Creek  
22 houses, just from a glance--I don't dare walk on property  
23 that I don't have permission, but just to get an idea, I  
24 like to drive by before we go to the trouble of getting  
25 permission because it's a--it's futile to get permission and

1 say, "Oh, this is so disturbed we don't want to sample."

2 Also, I looked at that school property. There's  
3 actually--kind of just the south-central part of the  
4 Walnut Creek area is actually own by Jefferson County school  
5 area that has been disturbed. In fact, that has volunteer  
6 alfalfa popping up as to where it has been tilled. Now,  
7 that still not necessarily eliminates it because if we can  
8 find out when the last time it was disturbed, then it gives  
9 you an idea of what aerial deposition, whatever may have  
10 been there since that disturbance, and so maybe a couple of  
11 samples there, maybe one in an area that we can document the  
12 disturbance, a vacant lot or what have you, and one that we  
13 feel pretty sure that is not disturbed.

14 MS. ELOFSON-GARDINE: So the other one would fall  
15 under private certain sampling?

16 MR. STONE: Right. Right.

17 MS. ELOFSON-GARDINE: Maybe we should think about  
18 grouping those that have disturbance under that private  
19 concern category so the samples will come back with the  
20 caveat this area was definitely disturbed.

21 MR. STONE: And there would be field notes taken,  
22 obviously, at every sample location. Now, one thing of  
23 concern on the north side though, even though it looks  
24 undisturbed, I was talking to the guys at the Broomfield  
25 water treatment plant the other day and one of them said

64



1 that that used to be a golf course.

2 MS. ABBOTT: That's correct. That land was owned  
3 by Tom Bowmar and it was put in. He went into bankruptcy,  
4 but it was put in for a golf course, while you are safe, I  
5 think, north and west. The other thing to think about is  
6 that that lot, that is safe, the school--just to the south  
7 of it is pretty undisturbed land right across the fence with  
8 cattle grazing on it, but has not been plowed over. So  
9 maybe if you do two sites in the Walnut Creek area, you  
10 might go to the--well, it's really south of Walnut Creek,  
11 even with the lot. That is for the schools and then  
12 northwest, but more west, making sure that you don't get the  
13 plowed land.

14 MR. STONE: The south area, I think, is  
15 definitely undisturbed, especially when you get onto the  
16 city of Westminster open space there.

17 MS. ELOFSON-GARDINE: So how about southwest?

18 MR. STONE: I think it needs to be looked at a  
19 little closer. I just drove through. I didn't even stop  
20 and get out of the car.

21 MR. LAVELLE: Well, who samples? Who wants to  
22 claim the spots here?

23 MS. ELOFSON-GARDINE: For the Walnut Creek,  
24 that's Lucy Pearce.

25 MR. LAVELLE: Yes, Lucy and Janette, I can't

1 remember her last name now.

2 MR. SCHONBECK: Why don't we make sure we contact  
3 them. I like Jim's idea; take two sites, one is as  
4 undisturbed as you can get, and the other is a piece of land  
5 that is disturbed that falls into Category 3 there that  
6 would be perhaps overseen by one of these people who  
7 originally suggested it, and leave it up to them.

8 We decide that there will be those two sites and  
9 leave it up to Jim and others who go out there for the  
10 nitty-gritty details of what to pick because we can't do  
11 that here today. I think two sites is appropriate.

12 MR. LAVELLE: We have the two sites and those two  
13 categories.

14 MR. MARGULIES: Two sites within the Walnut Creek  
15 area, one undisturbed.

16 MS. ELOFSON-GARDINE: I think we have a lot of  
17 other sites. Do we have to do two there?

18 MS. ABBOTT: I think so, Paula, because the worst  
19 went due east of the 903 pad and that's the first growth of  
20 people--90-something homes--93 homes.

21 MS. ELOFSON-GARDINE: We would not be going back  
22 and doing them again over there?

23 MR. SCHONBECK: You are talking about--

24 MR. LAVELLE: If we find something big we will go  
25 back, but--

1 MS. ELOFSON-GARDINE: I'm concerned because we  
2 had major discussions about this before, that we didn't want  
3 to waste a long time over there.

4 MR. LAVELLE: We have cut it from five or six  
5 down to two.

6 MR. MARGULIES: Let's take a vote if we can't  
7 agree.

8 MR. SCHONBECK: Paula agrees. It's done.

9 MS. ELOFSON-GARDINE: I agree. I don't want to  
10 go hog wild.

11 MR. LAVELLE: We will do two. And who  
12 wants--someone, I guess, should take responsibility for  
13 contacting someone at Walnut Creek.

14 MS. ABBOTT: I definitely will. I'm the one that  
15 suggested it to Lucy in the first place.

16 MR. MARGULIES: I will put your name down.

17 MR. BROCKMANN: Todd, are you recording which  
18 category?

19 MR. MARGULIES: Yes.

20 MS. ABBOTT: So that's No. 6 and 7.

21 MR. STONE: Pick two of those numbers.

22 MR. MARGULIES: I have CES-04 and a blank.

23 MS. ELOFSON-GARDINE: A blank.

24 MR. MARGULIES: Maybe assign it a number. I can  
25 do that. CES-04 and--

1 MS. ELOFSON-GARDINE: A and B or something.

2 MR. MARGULIES: CES-11, and we'll leave them with  
3 those numbers, if that's the way it works out, but most  
4 likely it will not be the exact locations you see on that  
5 map.

6 MR. LAVELLE: Right. Okay. Now 13, 14, and 15  
7 were the springs to Standley Lake, and we have agreed to  
8 table those for the time being.

9 MS. ABBOTT: I think we should start with one  
10 which would be the Woman Creek drainage.

11 MS. ELOFSON-GARDINE: I think that is a low  
12 priority before we get a chance to talk to Jim Stone, the  
13 engineer.

14 MS. ABBOTT: I'm saying we reserve one for him  
15 out of those three, at least, and the other two drainages  
16 are dribbles. The second proposition, the Woman Creek  
17 drainage, is the one most to the north of the property  
18 sticking out, which is where most water is brought in.

19 The next one is a dribble that goes north of our  
20 house. It is dry most of the time and is--well, it's just a  
21 dribble. And if Charlie McKay doesn't release water out of  
22 his two ponds right on the corner, none comes through. Then  
23 the third one Jim was talking about--the inlet has hardly  
24 even been run this year. It was where Westminster brought  
25 their water out of the Church addition into Standley Lake to

1 the south. And this year, all they did was bring in the  
2 Coal Creek water this spring and haven't brought in any more  
3 water, so it's dry as a bone and has been for a long, long  
4 time.

5 So the other two are especially the one most to  
6 the south in bringing water from Coal Creek and then  
7 circumventing it, and then coming into Standley Lake. So it  
8 would not be considered picking up runoff from anywhere  
9 around Standley, but I still think that we should--even  
10 though Jim isn't here, you know--let him get his two cents  
11 in and, at least, reserve the Woman Creek inlet. And I  
12 think we would all be interested in that.

13 MR. STONE: That's the CES-14.

14 MR. LAVELLE: Well, do we want to say we are  
15 going to sample that? We want to do CES-14.

16 MR. MARGULIES: Which one?

17 MR. LAVELLE: 14.

18 MS. ELOFSON-GARDINE: You need to mark that on  
19 the map.

20 MR. LAVELLE: I will. CES-14. Let's see, where  
21 is the best place to go here? Well, it looks like there's  
22 several samples that are south of the plant.

23 MR. MARGULIES: One question: Which category?  
24 Was that a validation sample?

25 MS. ELOFSON-GARDINE: I think that is a new area

1 sample.

2 MR. MARGULIES: Nobody sampled that before?

3 MS. ELOFSON-GARDINE: I think for--I guess we  
4 should call it a validation sample.

5 MR. LAVELLE: I think more of a validation  
6 sample.

7 MS. ABBOTT: And three, private concerns.

8 MS. LOCKHART: Whose choice is it?

9 MS. ABBOTT: Jim Stone, the engineer.

10 MS. ELOFSON-GARDINE: Bini, come here.

11 MS. ABBOTT: I have better maps, by the way.

12 (Discussion was held off the record.)

13 MR. LAVELLE: Okay. We kind of got sidetracked  
14 here. And now we will look at CES-O--that's just the spot.  
15 That's the actual exit--CES-34. This is one that's  
16 southwest of the plant, and I think this would fall into the  
17 hasn't-really-been-sampled category. There's not many  
18 samples off that direction, and it's one that Bini  
19 suggested.

20 MS. ABBOTT: And near Rocky Flats Lake, but now  
21 Paula has found a higher concentration just to the west of  
22 Highway 93. So it would be kind of even with Rocky Flats,  
23 directly west of Rocky Flats Lake, but on the west side of  
24 Highway 93.

25 MR. STONE: I drove by that the other day, and I

1 agree, the west side is probably the better even though,  
2 just by looking at it, it's still tough to tell whether that  
3 has been tilled in the past.

4 MS. ABBOTT: I think you will know by the  
5 grasses.

6 MR. STONE: Looking at the grass, it looks like  
7 it was grown by grasses, but here again, I'm looking from a  
8 distance, and I don't intend to be an expert.

9 MS. ABBOTT: If not, go back east of 93 on the  
10 State Land Board land which has been grazed, but I know  
11 there's remnants of tall prairie grass there.

12 MR. STONE: Is that not also the entrance to Coal  
13 Creek Canyon?

14 MS. ABBOTT: Well, you are quite a bit north of  
15 the entrance, but we found a gravel road in that picture, so  
16 it looks like there's some kind of a gravel road. It's on  
17 land owned by Blue Mountain Land Company, and they do graze  
18 cattle, but you can coordinate it with the map Paula has.  
19 It's a little area, D. She found a D concentration on that  
20 map. And so this is your ninth site; is that correct?

21 MS. LOCKHART: Yes. Todd and Bini will select.

22 MR. LAVELLE: CES-34, new, right? Right, I  
23 think.

24 (Discussion was held off the record.)

25 MR. BROCKMANN: It would helpful for me if you

1 put two marks next to one, two, three, so we can see what  
2 kind of balance we're getting here. It seems like we have a  
3 lot of new areas, and I think it's important we do a fair  
4 number of validation samples too.

5 MS. ABBOTT: For instance, southwest was by  
6 Ed Martell, at the southwest corner, so you would give it a  
7 private concern.

8 MR. SCHONBECK: Not just close in, but at some  
9 distance in case there is a skip zone.

10 MR. LAVELLE: Okay. Did you want them on the map  
11 or did you want numbers?

12 MR. BROCKMANN: I wanted to see the spread. I  
13 didn't want to end up with very much sample validation.

14 MR. LAVELLE: Right. That's a good idea.

15 MS. ELOFSON-GARDINE: What do you want to do  
16 next?

17 MR. LAVELLE: While Ann is putting those up,  
18 there is a fair number of stamps here at the level of  
19 Leyden.

20 MS. ELOFSON-GARDINE: And northwest Arvada.

21 MS. LOCKHART: Some are one and three and some  
22 are one or three.

23 MR. LAVELLE: Actually, I think--let's see.  
24 There's about one, two, three, four, five--five samples that  
25 are generally in the Leyden area. And I think all of these



1 were somewhat in response to this idea, especially in the  
2 '57 fire, that there might have been a plutonium level that  
3 went directly south.

4 There will be a bunch of samples taken by DOE in  
5 this area, so I think most of what we do in this area would  
6 be validation.

7 MS. ELOFSON-GARDINE: I think some are private  
8 concerns, though, because they have not done--a lot of that  
9 has not been done before, but I think it falls more to the  
10 area of private concern.

11 MS. ABBOTT: Well, we did the one showing the  
12 sampling subcommittee, then you asked for Leyden School  
13 site, which is owned by a private family.

14 MS. ELOFSON-GARDINE: And that may be disturbed,  
15 so that would fall under the private concerns by disturbed  
16 areas. But it looks like we have got at least two of the C  
17 ranging 65 to 100 counts per second cesium spots along that  
18 ridge.

19 MR. STONE: On the south side of the lake?

20 MS. ELOFSON-GARDINE: Yes.

21 MR. STONE: That's the most natural area there.  
22 It's loaded. It's full of yuccas.

23 MR. LAVELLE: Do you want to sample that? That's  
24 basically the south side of the lake.

25 MS. ELOFSON-GARDINE: No, the northwest

1 side--actually, the far west, here.

2 (Discussion was held off the record.)

3 MR. SCHONBECK: Jim, what number are we talking  
4 about right now?

5 MR. LAVELLE: We're talking about, say, 16.

6 MS. LOCKHART: CES-16?

7 MR. LAVELLE: Uh-huh.

8 MS. LOCKHART: Which is what? North of  
9 Leyden Lake?

10 MR. LAVELLE: Well, we don't know yet. We have a  
11 suggestion that we take three samples in the Leyden area  
12 south, basically hitting spots that, by the aerial surveys,  
13 look fairly undisturbed. So they would sort of go across  
14 the area from east to west. Does that sound reasonable?  
15 Three samples in the Leyden area? There seems to be an  
16 awful lot of interest there, and that seems reasonable.

17 MS. ELOFSON-GARDINE: We have looked at this to  
18 try to coordinate, and what we came up with was to try to  
19 hit those three C spots. There's another spot here, but,  
20 again, we have to best guess that far south.

21 MR. LAVELLE: Let's say that one of them is--

22 MS. ELOFSON-GARDINE: That's the Tennessee lady's  
23 request.

24 MR. LAVELLE: CES-20, CES-16.

25 MR. STONE: I thought it was the area further

1 south.

2 MS. ABBOTT: They are.

3 MR. STONE: Look at CES-35. That's--here, I will  
4 show you.

5 (Discussion was held off the record.)

6 MR. LAVELLE: CES-27 will be one of them.

7 MS. ABBOTT: Are you talking north of  
8 Leyden School, Paula?

9 MS. ELOFSON-GARDINE: That one is over here.

10 (Discussion was held off the record.)

11 MR. LAVELLE: Okay. So we have three sites in  
12 the Leyden area kind of in a line right across here. We  
13 will try to hit areas from the gamma surveys that look like  
14 they are undisturbed, more undisturbed, and they are CES-27,  
15 CES-28, and CES-02. And I think all three of them would  
16 fall under both sample--validation sampling and private  
17 concerns.

18 MS. LOCKHART: And who picks?

19 MR. LAVELLE: I think, Paula, you should probably  
20 be in on picking these. You were interested in the Leyden  
21 area, right?

22 MS. ELOFSON-GARDINE: Uh-huh.

23 MR. LAVELLE: Anyone else? LeRoy, I think you  
24 had some concerns about the Leyden area. Do you want to be  
25 in on picking these also?

1 MR. MOORE: Paula knows more than I do, but I do  
2 want to be on that.

3 MS. ELOFSON-GARDINE: This is where that lady  
4 from Tennessee wanted to have sampled was in that area  
5 there.

6 MR. LAVELLE: The dairy area.

7 MR. MARGULIES: Number CES-02 was Ken's.

8 MR. LAVELLE: Ken, we moved the site down, what  
9 was 02. Maybe we shouldn't have done that.

10 MR. MARGULIES: You originally said, Ken, you  
11 wanted 93 and 82nd Avenue, and they proposed moving that as  
12 much as a quarter to a half mile. Do you have any problem  
13 with that?

14 MR. KORKIA: Using the gamma survey, that's  
15 actually where I got that idea from.

16 MR. LAVELLE: Okay. So we're okay here.

17 MS. LOCKHART: So Todd and Paula select, and that  
18 was okay with Ken.

19 MR. LAVELLE: Yes. Okay. We're doing fairly  
20 well here. We're up to 12. Okay. Let's move along here.  
21 There's one sample here in northwest Arvada, CES-25.

22 MS. ELOFSON-GARDINE: I think that's just got to  
23 be contingent on a site survey and what it looks like in  
24 terms of undisturbed area.

25 MR. MARGULIES: If Jim and I are out there, and

1     they are somewhere close--

2                   MS. ELOFSON-GARDINE: I think around 80th. Jim,  
3     are you familiar with those big horse fields around Alkire  
4     or McIntyre and 80th? There's a bunch of field areas  
5     throughout that, and that's where you would need permission.

6                   MR. MARGULIES: That's no problem. It's a matter  
7     of whether you want one in that area.

8                   MS. ELOFSON-GARDINE: Yes.

9                   MR. MARGULIES: It may not be exactly there,  
10    but--

11                  MR. LAVELLE: The purpose of that was just to go  
12    out along plutonium lines from the '57 fire. So that  
13    probably fits more into the validation because I know there  
14    will be samples generally in that kind of area.

15                  MS. ELOFSON-GARDINE: Actually, I think that is  
16    more of a private concern because a lot of people in  
17    northwest Arvada are freaked out at having them looked at.

18                  MR. LAVELLE: Private concern, and the number is  
19    CES-25.

20                  MS. LOCKHART: Who selects?

21                  MR. LAVELLE: Just Paula.

22                  MR. STONE: That's not Alkire. Alkire is a  
23    little more to the east--I mean, to the west.

24                  MR. LAVELLE: I think it's kind of--

25                  MS. ELOFSON-GARDINE: In the area between

1 McIntyre and Alkire, you know, west of Simms, but not all  
2 the way to Independence.

3 MR. STONE: There's a real nice property, I  
4 noticed, right about where the railroad tracks cross Alkire.

5 MS. ELOFSON-GARDINE: Right on 80th. There is a  
6 railroad trestle, and west of there there's a bunch of horse  
7 pastures.

8 MR. STONE: Uh-huh. I noticed where the ridge is  
9 there. It's right about--

10 MS. ELOFSON-GARDINE: It's a big irrigation canal  
11 that runs on the north side of all those pastures.

12 MS. ABBOTT: Which side of Indiana are you on  
13 now?

14 MS. ELOFSON-GARDINE: East, about a mile east.

15 MR. STONE: East of Independence about a mile to  
16 Alkire and 80th or the railroad tracks.

17 MS. ABBOTT: You are going to get the undisturbed  
18 land if you go--

19 MR. STONE: Right on top of that ridge there.

20 MS. ABBOTT: That's the undisturbed land where  
21 you go to the horse pastures. It's not undisturbed.

22 MS. ELOFSON-GARDINE: Right. But somewhere in  
23 that area.

24 MS. ABBOTT: I would be interested in along that  
25 ridge and with your thoughts of does it get dumped--

1 MS. ELOFSON-GARDINE: On the other side of the  
2 ridge. Does it get rain washed and flow down to the edges  
3 of, like, the ravine just on the other side of that? Where  
4 is the collection spots is what we're looking for.

5 MS. ABBOTT: There is not a ravine there, and  
6 that's a field. In other words, where they fly the  
7 airplanes, what they call Sullivan Field is along that ridge  
8 and--

9 MR. LAVELLE: Bini, why don't you and Paula work  
10 on picking this location.

11 MS. ABBOTT: Is that okay?

12 MR. STONE: Well, actually that CES-09 is more or  
13 less the west edge of that same area that we're talking  
14 about.

15 MS. ELOFSON-GARDINE: That's what you were trying  
16 to aim at originally.

17 MR. STONE: You might condense those.

18 MR. LAVELLE: CES-09 and 08 were in this area  
19 right along Independence, south of the plant. Does this  
20 sample satisfy the same needs as these or do you want to  
21 take another sample in this area?

22 MS. ELOFSON-GARDINE: Still take some in there.

23 MR. LAVELLE: These two are close together. Can  
24 we take one in this area?

25 MS. ELOFSON-GARDINE: Yes. I think it should be

1 on the north side of that railroad trestle.

2 MR. LAVELLE: I think both of these are north;  
3 I'm not sure.

4 MS. ELOFSON-GARDINE: Because there is a  
5 ridge--if you look at the highway here and we are  
6 here--Independence--there's a railroad crossing. Here's the  
7 railroad line, and I think--it doesn't show a spiking  
8 necessarily. It says a D area, and maybe we can find a  
9 likely collection spot in there.

10 MR. LAVELLE: So one other sample in this area  
11 just a little bit east of Independence and north of the  
12 railroad.

13 MS. ELOFSON-GARDINE: Doesn't that sampler at  
14 72nd and Independence have positive plutonium sample in the  
15 air there?

16 MR. HARRISON: Not consistently, but we have  
17 turned up positive, and we haven't operated that for a  
18 couple of years.

19 MS. ELOFSON-GARDINE: But 72nd and Independence  
20 is a target point.

21 MR. SCHONBECK: It's close in on 11 o'clock. We  
22 are supposed to quit at 11:30. Jim has a presentation. I  
23 was wondering if we could work that in and continue this.  
24 I'm not sure how to handle the time issue because he has  
25 slides, and he's prepared today. I would like to have him



1 do his thing.

2 MR. LAVELLE: Okay. Well, this is going to get  
3 it up to about 14.

4 MR. MARGULIES: Just to clarify the last two, you  
5 want one around eight and nine?

6 MR. LAVELLE: Right.

7 MS. LOCKHART: What are you calling it?

8 MR. LAVELLE: Let's call it CES-08. We will call  
9 it--

10 MS. ELOFSON-GARDINE: 72nd and Independence.

11 MR. LAVELLE: It's about 72nd and Independence.

12 MS. ELOFSON-GARDINE: That one over there is  
13 closer to 88th and 90th.

14 MR. MARGULIES: So 25 you would have closer to--

15 MS. ABBOTT: Highway 72.

16 MR. MARGULIES: That is number 25?

17 MS. ELOFSON-GARDINE: Yes. That's good.

18 MR. HARRISON: One thing about that location that  
19 whoever does the sampling might want to be aware of,  
20 immediately to the northwest is a pretty good hill, and it  
21 blocks the line of site between that line and plant. Rather  
22 than sampling there, get up on the top of the hill or on the  
23 northwest of the hill so you have northwest of the hill.

24 MS. ABBOTT: There used to be a house there, and  
25 they took it away on the northwest part of that corner.

1 Possibly that would work.

2 MS. ELOFSON-GARDINE: Would you say that's about  
3 here, then? I think we have a question mark on trying to  
4 sample there already. So if you look at that circle with  
5 the question mark on it, you can confirm.

6 MR. HARRISON: That's pretty much where the hill  
7 is.

8 MS. ABBOTT: And DOE did sample on Sullivan's  
9 land.

10 MS. ELOFSON-GARDINE: You might want another  
11 green mark right there.

12 MR. LAVELLE: Do we want to agree to a third  
13 sample in this area? We have quite a few here. Another one  
14 in this vicinity on the northwest side of the hill.

15 MS. ABBOTT: And it's the northwest corner of the  
16 junction of Independence and Highway 72.

17 MS. ELOFSON-GARDINE: That was in a D section.

18 MR. MARGULIES: I'm confused. We have one  
19 approximately where CES-25 is. Just a second. That's not  
20 your 72nd and Independence?

21 MR. HARRISON: No.

22 MS. LOCKHART: What is it, then?

23 MR. MARGULIES: That's more the railroad and  
24 Alkire. We then have one--

25 MS. ELOFSON-GARDINE: Highway 72 and

1 Independence.

2 MS. ABBOTT: And that would be the northwest.

3 MS. LOCKHART: CES-08.

4 MS. ELOFSON-GARDINE: One on the east side and  
5 one on the northwest side of Independence.

6 MS. LOCKHART: The purpose of that 08?

7 MS. ELOFSON-GARDINE: Because Tony thinks that  
8 might be a collection site on the west side that we might  
9 want to use as a validation.

10 MR. MARGULIES: The northwest will be over here.

11 (Discussion was held off the record.)

12 MR. HARRISON: That circles basically the top of  
13 the hill, and you want to be northwest of that question  
14 mark, not much, but a little.

15 MR. LAVELLE: Taking one in basically the shadow  
16 of the hill and--

17 MS. ELOFSON-GARDINE: Yes.

18 MR. MARGULIES: There will be three: One  
19 essentially where eight and nine are, a line to the  
20 northwest, and one back there.

21 MR. LAVELLE: Another one up here. And I think  
22 we already called this sample 27 down to here, so let's call  
23 these two samples, CES-08 and CES-09.

24 MS. LOCKHART: And the purpose?

25 MR. LAVELLE: I think both of those would be

1 validation.

2 MS. LOCKHART: Who picks?

3 MR. LAVELLE: Paula. Okay. Now, what's your  
4 pleasure? Do we have an awful lot of these picked now? Do  
5 you want to break off and let Jim give his presentation on  
6 how the sampling may take place now that we have the  
7 locations spotted?

8 MS. ELOFSON-GARDINE: How many do we have so  
9 far?

10 MR. LAVELLE: Fifteen.

11 MR. KORKIA: How many more do we have to go  
12 through?

13 MS. ELOFSON-GARDINE: I think we're trying to get  
14 a basic start on a circumference of testing. There is that  
15 one in that field directly east that was--it was--this map  
16 doesn't show it. About here was where we put it at the last  
17 meeting. Maybe we can try for a couple more fields before  
18 we find--01 was here.

19 MR. MARGULIES: Whatever anybody wants. I just  
20 need to know. I'm happy with whatever people want.

21 MR. LAVELLE: There's a suggestion, I guess, at  
22 some point in time, to talk about a sample quite a ways east  
23 out here in the Northglenn/Thornton area. And do we want to  
24 make that a sample location?

25 MS. ELOFSON-GARDINE: That is, like, the

1 Federal Heights area, and actually, Karen Pitts suggested  
2 that that would be, you know--there is some undisturbed  
3 field areas out there that would be good to locate because  
4 that's a field of the original--if you had high plutonium  
5 and were trying to do a circumference testing, that's where  
6 you could have started seeing that direct east deposition as  
7 some of the logic she was using.

8 MR. STONE: I was driving through that area, and  
9 I haven't been in that exact spot there. I was just--well,  
10 I drove the area just north and west of there along  
11 Highway 34. There are a couple of nice locations; one I'm  
12 planning on doing a gammacon at, an in situ gammacon at, and  
13 I about decided down where that Park and Ride place is,  
14 right at the intersection of Highway 128 and Highway 34, the  
15 Boulder Turnpike--

16 MS. ELOFSON-GARDINE: Is that Federal and the  
17 Boulder Turnpike?

18 MS. ABBOTT: I thought you were up towards  
19 Estes Park.

20 MR. MARSH: Across from the airport.

21 MR. STONE: Just to the southeast of that,  
22 there's a ridge up there covered in yuccas. I don't know  
23 who owns it.

24 MS. ELOFSON-GARDINE: You are talking closer to  
25 Jefferson County Airport. You are talking about the Park

1 and Ride on the hill just south of the turnpike.

2 MS. ABBOTT: Just south of the airport and east  
3 of Wadsworth.

4 MR. STONE: There's a ridge between the  
5 Park and Ride and the turnpike that I have no idea who owns  
6 it or anything, but I just noticed it the other day as being  
7 what looks like a good location.

8 MS. ELOFSON-GARDINE: It looks like an old field.

9 MR. STONE: Covered in mature yucca plants and  
10 what looks like natural grasses from a distance.

11 MS. ELOFSON-GARDINE: That's Wadsworth, not  
12 Federal.

13 MR. STONE: It's where? Wadsworth and--

14 MS. ELOFSON-GARDINE: That's not the same as this  
15 over here. So this is Wadsworth here, so you are looking at  
16 that Park and Ride, approximately--it's like around  
17 Upper Church Lake.

18 MR. STONE: Where you have your finger?

19 MS. ELOFSON-GARDINE: Do you want to make a green  
20 mark now? I know on some of the surveys there is some  
21 warehouses up in this area to the northeast of the turnpike,  
22 and there are some hot spots around there. And this is some  
23 old silos over there. Do you know where I'm talking about?

24 MR. STONE: That whole area looked disturbed,  
25 though.

1 MS. ELOFSON-GARDINE: There are fields between  
2 where the turnpike runs, and if you look north of that  
3 diagonal, there are fields and EGG has some warehouses  
4 between that area.

5 MS. ABBOTT: Let's not forget Gale Biggs.

6 MR. MARGULIES: Was he contacted to come to this  
7 meeting?

8 MR. LAVELLE: He had a personal problem.

9 MS. ABBOTT: But we mustn't forget him, and let  
10 him start to do the legwork because his is way out to hell  
11 and gone.

12 MR. STONE: Excuse me, Bini. I signed three  
13 numbers for Gale Biggs because--

14 MS. ELOFSON-GARDINE: I think Gale has got to  
15 help physically choose that area.

16 MS. ABBOTT: Can we save a space right now so we  
17 don't run out of area?

18 MS. ELOFSON-GARDINE: Do you want to put a green  
19 mark in that Federal Heights area?

20 MR. MARGULIES: Number 36 is a new sample.

21 MS. LOCKHART: East of Upper Church Lake.

22 MR. LAVELLE: Is that an area that's been  
23 sampled? There are samples taken in that general area.

24 MR. STONE: Of Church Lake.

25 MR. LAVELLE: Yes. They are either yours or--

1 MR. STONE: Ours falls north and south of that.  
2 That one happens to be one of our gamma set runs through  
3 there. And, in fact, the planned location was about halfway  
4 between that one and the one that Paula was talking about  
5 originally, Federal Heights.

6 MR. LAVELLE: We will call that 37, I guess.

7 MS. LOCKHART: This is number 17.

8 MS. ELOFSON-GARDINE: Then you have that one down  
9 there, down by Golden Peak Dairy, that I think Jim Stone was  
10 best guessing better than I on the location that Jim Stark  
11 from Tennessee was asking for, and that's the one that's  
12 halfway between Leyden and Golden. So put X down there.

13 MR. LAVELLE: Do we want to sample there?

14 MS. ELOFSON-GARDINE: Yes.

15 MR. LAVELLE: We're suggesting now a sample down  
16 by--near a dairy. I think that is just north of  
17 North Table Mountain.

18 MR. MARSH: 93, yes. I like that idea.

19 MS. ELOFSON-GARDINE: Somewhere in that region.

20 MR. LAVELLE: CES-35. And that's probably a new  
21 area.

22 MS. ELOFSON-GARDINE: Do you want to specify the  
23 two Ralston schools for this before we go away from that?  
24 We should, at least, start with the one unless you think  
25 there are enough along Independence.



1 MS. ELOFSON-GARDINE: The  
2 Ralston School/Lookout Mountain is a must, and that is a  
3 validation sample. And the other one is the Ralston School.

4 MS. ABBOTT: About 73rd and Independence on the  
5 east side of Independence.

6 MS. ELOFSON-GARDINE: 73rd and Independence is  
7 Bini's Ralston School, and that would be somewhere in here.

8 (Discussion was held off the record.)

9 MS. ABBOTT: Can you see a creek crossing there?

10 MS. ELOFSON-GARDINE: Kind of.

11 MS. ABBOTT: Because it's just south of that  
12 creek on the east side of Independence.

13 MS. ELOFSON-GARDINE: Is it pretty much where  
14 that circle with the 72nd is? I think we figured before  
15 that's about where that is on the map.

16 MS. ABBOTT: Ralston Creek crosses and then--

17 MR. LAVELLE: There's a creek right there.

18 MS. ABBOTT: It's labeled as Ralston Creek. Are  
19 these maps the same?

20 MR. LAVELLE: That one is bigger.

21 (Discussion was held off the record.)

22 MR. MARGULIES: Was there a definite decision on  
23 35 near the dairy?

24 MS. ELOFSON-GARDINE: Yes.

25 MS. LOCKHART: That's between Golden and Leyden

1 on highway what?

2 MS. ELOFSON-GARDINE: 93, halfway between Leyden  
3 and Golden.

4 MS. LOCKHART: Okay.

5 MS. ELOFSON-GARDINE: So perhaps near  
6 Golden Peaks Dairy. I have to ask him a street marker of  
7 some kind. I haven't talked with a couple of these.

8 MR. MARGULIES: Before you go on to the next one,  
9 that's going to be 38.

10 MS. LOCKHART: What's the location of 38?

11 MS. ELOFSON-GARDINE: And would this be 39?

12 MR. LAVELLE: 35.

13 MS. LOCKHART: 38 is Highway 72.

14 MR. LAVELLE: Ralston School site.

15 MS. ELOFSON-GARDINE: Highway 72 is the same as  
16 Independence.

17 MS. ABBOTT: The problem is, Independence is  
18 Highway 72, and then it branches off and becomes only  
19 Highway 72 for a while, and then there's 72nd right there  
20 too, but this is about 74th.

21 (Discussion was held off the record.)

22 MR. LAVELLE: Did we call this CES-39 then?

23 MS. LOCKHART: Yes.

24 MS. ABBOTT: And don't forget Gale Biggs. Make  
25 them put a number down.

1                   MR. MARGULIES: 18 through 20. Are we going to  
2 want to do three out there? He originally proposed three  
3 locations. We assigned three numbers out there for  
4 Gale Biggs' choices.

5                   MS. ABBOTT: How many numbers do you have, not  
6 counting Gale's?

7                   MS. LOCKHART: We have 20.

8                   MR. MARGULIES: We have 20 samples. The number  
9 itself doesn't mean that much. We have 20 sampling  
10 locations identified without Gale's. We originally allowed  
11 three for Gale. And, again, do we want to condense that  
12 into one? Neils said he was going to contact Gale and  
13 hopefully have him contact Jim or myself since we would be  
14 out there. If Gale wants to pick his sites out there, find  
15 out who owns them, and let us know, that's fine. If he  
16 wants me to do that, that's fine. And, again, it's whatever  
17 anybody wants.

18                   MR. LAVELLE: Let's kind of cancel all the side  
19 conversations here for a minute and concentrate. We have an  
20 issue on the floor here, and that is: We know we are going  
21 to have at least one sample for Gale Biggs. Jim had  
22 reserved three sampling numbers. Do we want to keep those  
23 three samples and have Todd and Gale and Jim work together  
24 to pick the sites? Do you want to have three?

25                   MS. ELOFSON-GARDINE: Absolutely.

1 MR. KORKIA: To confirm his hypothesis, I know  
2 three would be able to confirm for him.

3 MR. LAVELLE: Those would be 18, 19, and 20.

4 MR. MARGULIES: Which would give us a total--if  
5 he were to pick three, we're standing in 23 samples.

6 MS. ELOFSON-GARDINE: It's a good start.

7 MS. LOCKHART: And the purpose was?

8 MR. LAVELLE: All of those will be new.

9 MS. LOCKHART: And Todd and Gale picks them?

10 MR. LAVELLE: Yes. And Jim.

11 MS. LOCKHART: Jim Stone.

12 MR. MARGULIES: I can't impress enough, Jim and  
13 I, obviously, are going to have to go and drive around,  
14 whether it's before and after. I can probably go now and  
15 hit and miss and get the landowners for the general areas,  
16 and then we can go out and stake them, but, again, I defer  
17 to Jim. And if we're out there, they are going to be in  
18 these general areas, but due to disturbance, et cetera, et  
19 cetera, et cetera, they may get moved, hopefully not far,  
20 but short distances just based on what we actually see in  
21 the field and just as long as you realize that we're not  
22 going to move them ten miles.

23 MR. STONE: And the type of samples.

24 MR. MARGULIES: Exactly. There may be a case  
25 where Jim or myself decides--or whomever--for some reason or

1 another we do need to move it a little ways, just so people  
2 understand that. We will still be in the area that the  
3 individual or group wants sampled, but it may be a short  
4 distance away from maybe the exact location.

5 MS. ABBOTT: Again, you can call him.

6 MR. MARGULIES: Oh, by all means.

7 MS. ABBOTT: And especially for Gale.

8 MR. MARGULIES: Neils said he was going to  
9 contact Gale and have him contact Jim or myself. If he  
10 wants to pick his sites, that's fine with me, and let me  
11 know who owns them. If he wants Jim and myself to take a  
12 look at whatever--I probably shouldn't speak for Jim since  
13 that is halfway out to Brighton. But as long as he gets  
14 with us, whatever he feels best is fine with me.

15 (Discussion was held off the record.)

16 MR. KORKIA: How do we handle Jim Stone, the  
17 engineer?

18 MR. LAVELLE: One sample, and that we would get  
19 with him and try to figure out what exactly he had in mind.

20 MR. MARGULIES: Number 14 was the other  
21 Jim Stone.

22 MR. STONE: The engineer.

23 MS. LOCKHART: CES-14 was the one we chose.

24 MR. LAVELLE: Unfortunately, I guess, we will not  
25 get to Jim's sampling protocol.

1                   We do have some work to do, of course, to get  
2   permission from all the sites, to find them, specifically,  
3   but then do we now need to meet another time before any  
4   actual samplings are taken?

5                   MS. ABBOTT: Can I ask--the reason we said until  
6   11:30 is because Neils had to leave, and he didn't know at  
7   the time who would be here. Could we still have his  
8   presentation or do other people have to leave at 11:30? Are  
9   we kicked out of the room at 11:30?

10                  MS. ELOFSON-GARDINE: I think we are kicked out  
11   at noon.

12                  MR. MOORE: I think we have the room until noon.

13                  MS. ABBOTT: Does anybody have to leave?

14                  MR. MOORE: Neils wanted to listen to the  
15   presentation. Can we set another meeting?

16                  MS. ABBOTT: Sorry. I didn't realize that.

17                  MR. STONE: I can probably tailor my talk a  
18   little bit more to our needs.

19                  MR. LAVELLE: Okay. That would be good. Okay.  
20   Before we wrap up and set another meeting date, do we feel  
21   comfortable with this as a start?

22                  MS. ELOFSON-GARDINE: We didn't cover that  
23   Superior area, but that's the only one that's left out from  
24   what we talked about at the last meeting.

25                  MS. ABBOTT: Which one?

1 MS. ELOFSON-GARDINE: Superior.

2 MS. ABBOTT: But, of course, you said that CSU or  
3 somebody is sampling along that hill just in front of  
4 Rock Creek.

5 MS. ELOFSON-GARDINE: There was some concerns  
6 expressed from local realtors about all the building boom in  
7 Superior and that that area really has not been tested.

8 MS. ABBOTT: Jim, you were saying there were  
9 three--

10 MR. LAVELLE: Well, I don't think that the DOE  
11 sampling is going to go much beyond about a mile or less  
12 north of the boundary, so it won't get to Superior.

13 MS. ELOFSON-GARDINE: But it was approximately  
14 here and it kind of follows Coal Creek's flow, so it's up to  
15 you guys if you want to add it, but that was the last  
16 suggestion from a couple of residents and realtors in that  
17 area.

18 MS. ABBOTT: Do you feel that possibly there is a  
19 gap there in looking at our map? Do we have kind of a blank  
20 space there?

21 MS. ELOFSON-GARDINE: Yes. And it seems the top  
22 is filled in, that we started to drift towards this way, so  
23 I would kind of like to see us have something there so it  
24 fills that gap. So it's up to you guys what you want to do.

25 MR. LAVELLE: That would be along Coal Creek.

1 MS. ELOFSON-GARDINE: And it follows Gale's idea  
2 of following the drainage too.

3 MR. LAVELLE: So we're talking about something  
4 that's west of Independence, south of the Boulder Turnpike,  
5 maybe two and a half miles north of the buffer zone  
6 boundary.

7 MS. ELOFSON-GARDINE: They will have to survey a  
8 spot along there. Isn't there a Park and Ride that they put  
9 in?

10 MS. ABBOTT: No.

11 MS. ELOFSON-GARDINE: I think a lot of people  
12 leave their cars there.

13 MS. ABBOTT: Well, there is Park and Ride at the  
14 southwest corner right where the Boulder Turnpike crosses--

15 MR. MARGULIES: Is everybody happy if Jim and I  
16 go out and find a good location that we feel is undisturbed  
17 and meets our needs, which it will probably be validation?

18 MR. LAVELLE: Probably new area.

19 MS. ELOFSON-GARDINE: Sampling new areas.

20 MS. ABBOTT: If you come south, just make sure  
21 you are south of the Boulder Turnpike. And first, you have  
22 the little town of Superior, but then if you will come about  
23 a mile and a half south of the town of Superior, you will  
24 hit a hillside which is pretty well undisturbed.

25 MR. MARGULIES: Okay.



1 MS. ABBOTT: South of the new  
2 Rock Creek Subdivision water tank.

3 MS. ELOFSON-GARDINE: There's some fields on the  
4 west side of McCaslin still that I think have been  
5 practically undisturbed, south of the turnpike and west of  
6 McCaslin.

7 MS. ABBOTT: And they have just started digging  
8 up more just to the east of McCaslin.

9 MS. ELOFSON-GARDINE: Right. And I think--is  
10 that new landfill going to be on the south or north side of  
11 the highway?

12 MS. ABBOTT: I don't know anything about it. I  
13 don't know about a landfill.

14 MR. MARSH: To move on, briefly. We still are  
15 anticipating photographing these sites when the sample is  
16 being made?

17 MR. MARGULIES: Yes.

18 MR. MARSH: Where is the equipment coming from?

19 MR. MARGULIES: I have a personal camera, if need  
20 be. I'm sure you have a camera as well.

21 MR. STONE: Yes.

22 MS. ABBOTT: He didn't hear.

23 MR. MARSH: There's still a question as to when  
24 and how the photographic documentation will be done when you  
25 guys go out and start pulling these samples, not necessarily

1 when you go in to do your preliminary survey, but when the  
2 site is actually chosen.

3 MR. STONE: Right. What I do with the sampling  
4 I'm doing now, and I would highly recommend it for these  
5 samples as well, I take a photograph about a meter above,  
6 directly down, perpendicular to the ground, to document the  
7 vegetation cover.

8 MS. ELOFSON-GARDINE: So what Greg is talking  
9 about is perhaps a wide shot of where you are in the  
10 perspective of the area.

11 MR. STONE: And so each spot we sample a  
12 photograph directly above it, and after it is sampled, I  
13 take a shot of the profile that we go down 21 centimeters.  
14 That's something that we still need to talk about which was  
15 part of what I was going to talk about today was  
16 recommending some of these as well. We might pick and  
17 choose or go back for it or whatever.

18 The one thing I do to characterize the site is I  
19 take four directions, north, east, south, west, from the  
20 center so you have documentation of the drainage valley,  
21 whatever is in the area. And I have a 28-millimeter lens,  
22 so it pretty well gets most of it.

23 MS. ELOFSON-GARDINE: Is it a 35-millimeter  
24 camera?

25 MR. STONE: Yes. It does a pretty good angle

1 without too much distortion, and even then, there is some  
2 distortion, but on the close-up shots, I use scales to be  
3 able to determine exactly what that distortion is.

4 MR. MARSH: What kind of film do you use?

5 MR. STONE: I have been using Ektachrome 100 ASA  
6 generally to get good detail.

7 MR. MARSH: Detail is important.

8 MR. STONE: That way you don't get the graininess  
9 and stuff. I use a flash when I'm taking photographs down  
10 in the hole because of shadows and stuff that you get  
11 problems with in the morning and the late afternoon  
12 particularly. And it doesn't seem to--the color doesn't  
13 seem to be too bad and Kodak film--I tried Fuji, and it  
14 seemed the colors were off, and it was a weird rusty brown,  
15 so I think that is a better true color. And you can get  
16 one-day service on Ektachrome versus Kodachrome.

17 MS. ABBOTT: Could you bring a sample of the  
18 sets?

19 MR. STONE: Yes.

20 MS. ABBOTT: You have them?

21 MS. ELOFSON-GARDINE: That's what you have in  
22 your box.

23 MR. STONE: Yes.

24 MS. ELOFSON-GARDINE: Is Bini the only one that  
25 has a video cam?

1 MR. MARSH: Well, we haven't talked about that.

2 MS. ABBOTT: I do have one.

3 MS. ELOFSON-GARDINE: It would be kind of nice  
4 when you all decide to do it if Bini or if anyone would loan  
5 it, or does the Department of Health--surely they have a  
6 video cam.

7 MS. LOCKHART: Someone must have one.

8 MS. ELOFSON-GARDINE: It would be nice to have  
9 somebody do a pan of the area when you are at the site, and  
10 you can talk on that and say, "We are at site number blank,  
11 and this is what we are doing."

12 MS. ABBOTT: That would be interesting each time.

13 MR. STONE: That is not a bad idea as far as  
14 characterizing the site. Also what I do is I have a placard  
15 with an erasable ink pen that every photograph I have, I  
16 have a placard telling what it is because you try to keep  
17 photo logs and never keep them straight.

18 MS. ELOFSON-GARDINE: It would be--when they  
19 finally embark on it, it would be a good archive for the  
20 project. This is the result of--what is it--nine months of  
21 planning.

22 MR. LAVELLE: Okay. So, next meeting. I think  
23 we're down to that point. When do we want to have the next  
24 meeting?

25 MS. MORIN: Soon or wait awhile.

1 MR. LAVELLE: It could snow.

2 MS. MORIN: What about next week, the 7th? When  
3 can Neils do it and when can he not?

4 MR. KORKIA: He's probably set by day.

5 MS. ABBOTT: He's going to have to take off the  
6 8th and the 9th.

7 MS. ELOFSON-GARDINE: He has Monday, Wednesday,  
8 Friday classes. I think Thursday he's off, and Tuesday he  
9 has lab.

10 MR. LAVELLE: I think that's where he was going  
11 today.

12 MS. ABBOTT: What about the afternoon of the 9th  
13 or are there other things going on?

14 MS. MORIN: We don't know. There might be  
15 something else going on. What about the 7th, the 10th, or  
16 anytime the week of the 13th through the 17th?

17 MR. LAVELLE: Just tell me. Give me a couple  
18 dates. What dates won't work for people and then I will.

19 MS. ELOFSON-GARDINE: The week of the 13th is  
20 better.

21 MR. MARGULIES: I like the 13th.

22 MS. ELOFSON-GARDINE: 13th, 14th, or 16th maybe.

23 MR. LAVELLE: 13th, 14th, or 16th, will any of  
24 those not work for anybody?

25 MS. ELOFSON-GARDINE: I'm available on the

1 afternoon of the 15th.

2 MS. MORIN: The 13th, 14th, or 16th.

3 MR. KORKIA: The morning the 16th is out and you  
4 will be out too if you are going to the public  
5 participation.

6 MS. LOCKHART: You are right.

7 MS. MORIN: So it will probably be the 13th or  
8 the 14th, and I'll give everybody that was here a call.

9 MS. ELOFSON-GARDINE: I will go for the 14th for  
10 a vote.

11 MS. LOCKHART: What can Neils do?

12 MS. MORIN: The morning.

13 MS. ELOFSON-GARDINE: On the 14th. We need to  
14 check and maybe--do we want to aim for the 14th?

15 MS. MORIN: We will aim for the 14th, and I will  
16 get somebody to call you all again. That would be a  
17 Tuesday.

18 MS. ELOFSON-GARDINE: If he didn't have to come  
19 that early, can we aim for 9:00?

20 MS. MORIN: We will aim for 9:00 to 11:30 because  
21 we didn't start until 9:00 anyway. 9:00 to 11:30.

22 MR. LAVELLE: Okay.

23 MS. MORIN: I will try to get this room.

24 MR. LAVELLE: So unless you hear otherwise, it  
25 will be Tuesday, September 14, from 9:00 to 11:30.

1 MS. MORIN: You will make sure that you will  
2 care of that and bring it back for the next meeting.

3 MR. LAVELLE: Okay. Why don't we close the  
4 meeting so our reporter can catch her breath, and we'll  
5 you on the 14th, and then we can continue talking.

6 WHEREUPON, the within proceedings conclude  
7 the approximate hour of 11:40 a.m. this 1st day of  
8 September, 1993.

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Re: Citizens' Environmental Sampling Committee

12

Date of Hearing: September 1, 1993

13

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## Notes of Counsel

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